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Issue 75 • 14 April 1990

NEW COMPUTER EXPRESS

BRITAIN'S BIGGEST SELLING COMPUTER WEEKLY

AMIGA

- First Amiga fax card
- Tower of Babel
- Books galore

ST

- Ultimate accessory
- Kidpainter is here
- Pipe Mania review

PC

- Colour your scans
- Full Metal Planet
- Steve Davis at last!

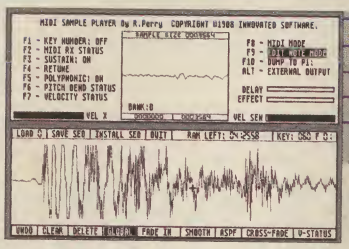
ARCHIMEDES

- Acorn cuts prices
- Eucorn music on PD

CPC

- Guns and games

BBC•C64•SAM
SPECTRUM•QL
MSX•XE•PCW
SPECIALIST COLUMNS



Music FOR YOUR MACHINE

DON'T MISS IT

The seven-week definitive series starts on page 53

CALLING ALL COUPÉS

SAMs will need dealer first aid

MGT promises to find a painless fix for new ROM chip problem

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Games on watches from the United States

WRIST-TOPS ARRIVE

A company in the US is set to launch a series of 'wrist-top' games machines based on best-selling computer and video titles.

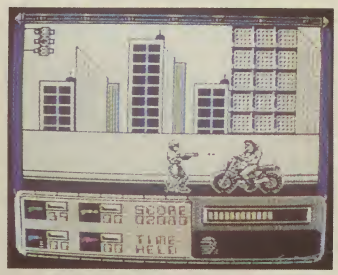
The Tiger LCD Video Games Watches come complete with normal alarm and time functions. They strap to the wrist and are operated using two or more tiny tabs on the front and side as fire buttons.

Thus far the firm has announced that it will be launching versions of *Batman, Double Dragon, Robocop, Wrestlemania Challenge, Simon's Quest (CastleVania II)* and *Ninja Garden*.

A game based on the new Warren Beatty and Madonna movie *Dick Tracy* is also planned. The watch itself, says the firm, will be styled in much the same way as a 1920s time piece. Presumably, though, it won't be clockwork.

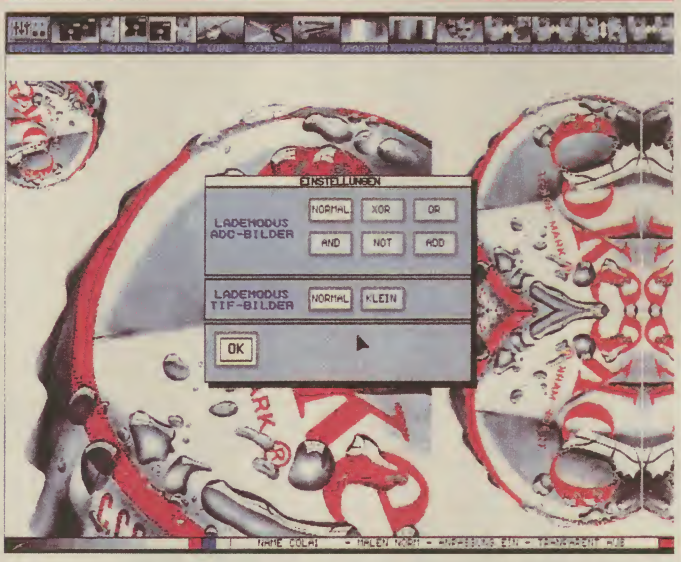
Tiger previewed its new line-up at a toy fair in New York recently. It plans to launch on to the US market within the next four weeks. As yet it is not clear how far European distribution deals have been negotiated.

However, given the size and price of these gadgets, it will be no surprise if we see them in the shops by September. The watches cost the equivalent of only £10 each. ■



• Flick of the wrist: Robocop and several other film licences will be available in watch format soon. The graphics should be better than this Speccy version.

WHAT A GREY DAY



• If your scanner gives you the blues (or more probably the greys), GEM Distribution can preen your pixels with Addcolor, a PC program which lets you colour your greyscale scanner images.

It needs at least 512K of RAM, VGA, a hard disk and a mouse. It uses 1-bit TIFF-format scans so the GS4500, ScanMan and Cameron HandyScanner will work with it. The price is £99.99 and it is obtainable from GEM on 0279 416228. ■

Conference agrees on protection

Leading computer and legal experts from around the world recently met in Brussels to discuss software copyright protection.

The conference, called 'Software, A Major Opportunity for Europe', centred on an amendment to the European Commission's proposed directive which would allow people to decompile software programs.

Decompilation is the practice of taking apart someone else's encoded software for the purposes of analysis. In most European countries this is illegal – if it were not software developers would be in a better position to use new tricks and 'trade secrets' which are hidden in a program.

A number of speakers argued that these issues are already being addressed by standards organisations. It was also pointed out that the EC can intervene if it feels information is being withheld to such an extent that it could be seen as unfair competition.

Nevertheless, the consensus of speakers and attendees agreed that strong protection of software was essential to the success of the European software industry. The conference was organised by the Software Action for Europe Group, which can be contacted in Brussels on 010 32 2512 9890. ■

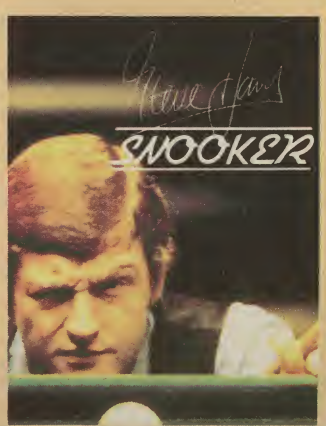
Steve makes it to the PC

There can't be many gamers who haven't sampled the ubiquitous *Steve Davis World Snooker* game. But, curiously, the title has never been released for the PC.

Not surprisingly, publisher CDS reckons the time has come to convert Davis to IBM compatibles. He's already appeared on virtually every format imaginable, including the PCW.

Steve Davis World Snooker offers you the chance to play not only snooker, but also UK and American pool, billiards and a bonkers foreign game called Carem in which you play on a table without pockets. It costs £24.99.

Meanwhile CDS is launching *Sporting Triangles* for the Archimedes and a compilation of family favourites such as draughts and dominoes for the PCW. Call 0302 321134. ■



• Steve Davis: now on the PC

Back up blues

A single tape could protect 15 networked PCs from data loss for weeks, according to IQ International of Tavistock.

Real Time Backup is a software product that records all changes made to a hard disk the instant they occur and stores the changes on disk or tape.

That's good news for those of us who forget to back up our work constantly. It costs £295 from IQ on 0822 614477. ■

Smarter than the average game

Yogi Bear and Boo Boo are the latest screen stars to come to the micro in a budget game licence deal between Hanna-Barbera and Hi-Tech Software.

Yogi's Great Escape **is based on the feature film of the same name and will be released on the Hi-Tech budget games label.**

Soon to follow is *Hong Kong Phooey – Number 1 Super Guy*, and further games based on Ruff and Ready and Atom Ant are planned.

Prices will be £2.99 for 8-bit machines and £5.99 for 16-bit machines. More from Hi-Tech on 0742 587555.

Chips on new machine must be changed, says Miles Gordon

COUPE BUG FORCES RECALL OF MACHINES

A fault in Miles Gordon Technology's SAM Coupé computer has caused the firm to plan a large-scale replacement of chips in all the machines in circulation.

Some 8,000 owners of the new computer will be required to take their machine back to their local dealer for a re-fit. The dealers will have to extract the Coupé's system ROM and replace it with a new model.

MGT has found that a bug in the ROM is causing the machine to crash when it undertakes certain tasks. Users are currently having to type in 'cheats' which will get around the bug.

However, the firm regards this as an unsatisfactory state of affairs and intends to make amends before any more machines are sold.

The new system ROM is currently being tested by MGT technicians. Within the next few weeks all Coupés coming off the production line will include the new chip. MGT will then announce the details of its ROM replacement schedule.

The firm is hoping to play down the significance of this move and is claiming that the whole operation will only cost "a three figure sum".

Joint boss Alan Miles told *Express*: "There are no secrets. We are aware that there are a few bugs, it's up to us to provide users with the best possible machine.

"We don't want to excite people at this stage, and the last thing we need is thousands of owners turning up here asking 'where is my new ROM?'. It's going to take a few weeks to finish the debugging process.

"After that it will just be a case of taking the machine to the dealer and he can slot in the new ROM. It's a five minute job. We've spoken to a number of dealers – we want to make sure that they can handle it."

He added: "We've always known that there would be a need to undertake a replacement. It's the same with any new machine. There are millions of things in the Coupé and the only way to find out what's functioning properly is to give it a chance in the market. The Speccy has been out there for years with flaws but they were never really tackled. We want to fix ours at the earliest possible opportunity."

MGT manufactured 8,000 machines at the beginning of the year and most of these have been sold. The firm stresses that the Coupé has been sold at a slow time of the year. Most computers are bought in the autumn and Christmas seasons. The firm estimates sales of 70,000 by the end of the year, giving it a five per cent share of the leisure market.

Within the next two weeks two major trade distributors – Centresoft and Leisuresoft – will have signed a deal with MGT. This will effectively give the Coupé a much larger 'shop window' within the market. Centresoft and Leisuresoft are responsible for supplying most of the country's computer shops.

A tie-up with a High Street retailer is also expected to be announced before the end of the month.

"We felt we had to get the machine in shape before making these commitments," added Miles. "There's a lot happening on the Coupé over the next few months particularly on the software side.

He said the job would give users and dealers a good opportunity to talk about forthcoming packages.

Do you own a SAM Coupé?

If you've bought a Coupé, sit tight. MGT says it is working flat out to make sure the new ROM is in perfect order. Until then there's nothing the firm can do.

Next month an announcement will be made through the press and dealers explaining how to go about replacing your chip. It is a simple operation which your dealer will be able to handle without a great deal of fuss.

What is the system ROM?

The system ROM contains the first program that a computer loads when it is switched on. This is usually a BASIC interpreter (as in the Coupé) and if it is flawed, all other programs and applications that run from it may well fail to work.

Unlike business machines which load their main operating system (such as MS-DOS) from disk, and can change the operating system with a simple disk change, the Coupé has to have the ROM chips changed.

Cheap PC applications package offers DTP and the rest for £30

Mini Office**'s stranglehold on the cheap office applications market is under siege from European Electronic Zoo.**

Swift Simplified Solutions is a series of applications for the PC available at £9.99 each or £30 for all five.

For your £30 you get word processor, database, spreadsheet, forms maker and desktop publisher. This must make *Swift* the cheapest DTP on the market. And that includes the 8-bits too. More information from European Electronic Zoo on 0453 887008.

Communists going out, computers coming in

The US looks set to relax its technology stranglehold on the East after announcing that the Commerce Department will take over the review of high-tech equipment from the Defense Department.

The Commerce Department is expected to take a more liberal view of the reviews, and US businesses will finally get a shot at the virtually untapped Eastern European market.

Certain types of computers are no longer deemed a security risk and will be freely exported to the Soviet bloc.

The Pentagon will still retain its power of veto over supercomputers.

• Amiga 'best computer' • Psygnosis 'top publisher'

EURO SOFT CONTEST: ALL THE WINNERS

The European Computer Leisure Awards 1990 had a truly cosmopolitan feel as the accolades were spread world-wide in a ceremony at London's Café Royal.

Editors of some of Europe's leading computer magazines got together to pluck 26 winners from the 156 nominees. Representatives from Italy, France, Germany, Spain, the UK and Sweden nominated their selections for the 27 categories, then each nomination was evaluated to find the winner.

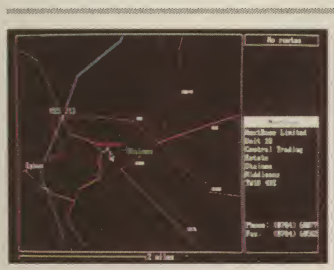
After some discussion, the editors agreed that 1989 was the year of the Amiga. They voted it best computer. No software publisher can claim to have scooped the awards, although Ocean and Electronic Arts both fared well.

Psygnosis – a relatively young and small British company – can be particularly pleased at winning software publisher of the year. The firm's promotional activities are basic when compared to better known companies and it can truly claim to have won on the merits of its product line.

The awards were sponsored, among others, by Future Publishing, owner of *New Computer Express*. ■

EUROPEAN COMPUTER LEISURE AWARDS

Best Animation	*Space Ace*	Readysoft
Best Graphics	*Shadow of the Beast*	Psygnosis
Best Sound Effects	*Future Wars*	Delphine / Palace
Best Shoot-'Em-Up	*Xenon II*	Imageworks / Mirrorsoft
Best Action Game	*Batman*	Ocean
Best Arcade Conversion	*Rainbow Islands*	Ocean
Best Adventure Game	*Indiana Jones Last Crusade*	US Gold
Best Role Playing Game	*Chaos Strikes Back*	FTL Mirrorsoft
Best Strategy	*Populous*	EA
Most Original Game	*Populous*	EA
Best Flight Simulator	*F16 Combat Pilot*	Digital Integration
Best Sports Simulation	*Kick Off*	Anco
Best Educational Program	*Sim City*	Infogrames
New Title	*Rainbow Islands*	Ocean
Publisher of the Year	Psygnosis	
Game of the Year	*Populous*	EA
Computer of the year	Commodore Amiga	
Printer of the Year	Citizen Swift 24	
Utility of the Year	*Norton Utilities* 4.5	Peter Norton Computing
Best PC Product	*Animator*	Autodesk
Best Amiga Product	*Deluxe Paint III*	EA
Best ST Product	Spectre GCR	HiSoft
Best Word Processor	*WordPerfect* 5	
Best Database	*dBase IV*	Ashton Tate
Best Graphics	*Deluxe Paint III* (Amiga)	EA
Best DTP Program	*PageMaker* 3.5 (Macintosh)	Aldus



• Autoroute Plus: *file and phone.*

Putting phones on the map

Racal Vodaphone is planning to sell-overlay files for Nextbase's *Autoroute Plus* which will help cellphone users keep their signals up.

The overlays add the locations of 'cells' and the strength of signal in an area. They define prime areas, fringe areas and no-go areas, and a zoom facility allows you to home in on a target.

This is one of the first products to utilise Nextbase's overlay compiler, a construction kit to allow the tailoring of *Autoroute* to cater to an individual need. No prices have been fixed as yet. Racal is on 0836 1836. ■

• Escape from Colditz: *set in the age of a united Germany.*

Making the Great Escape

Digital Magic Software is to launch a computer version of that well-loved Second World War board game Escape From Colditz.

Players of the original will be familiar with the format. But just to add authenticity, Digital Magic employed the services of the board game's author Major Pat Reid.

***Escape From Colditz* sees you taking control of four Allied prisoners of war incarcerated in the notorious German camp. The escapees have to utilise objects such as bedsheets and paperclips in order to get out of the camp.**

Digital Magic plans to release the game later this year for the Amiga, ST, PC and Commodore 64. Other titles to follow in the release schedule include Goof and *Shock Wave*, a spectacular sci-fi shoot-'em-up. ■

Asia awaits Friday 13th

We've grown used to it in the West, but with Friday April 13 fast approaching, the Asian business community are praying that the Jerusalem B virus will pass them by.

Piracy is rife in Asia as the software that developing countries need is often too expensive for their means. Even leading firms bundle bootleg software when selling PCs.

In Hong Kong, US sourced software has been selling for up to four times its price in the United States.

Viruses have caused havoc in business and educational establishments and even publishing hasn't escaped lightly.

On December 7, a newspaper, *The Independent of Bombay* came out with with an edition of only eight pages after a virus halted production.

Lack of security and staff using office computers to run pirate games account for some of the infections. Despite an effort by the authorities to cut back on piracy it is still rife and even bulletin board systems are doing their bit to try and halt it by carrying downloadable scan and disinfect programs. ■ (Newsbytes)

Poll Tax computer helps out

The authorities appear to have made a bit of a pig's ear out of the Poll Tax, eh readers? So, in order to tidy things up a bit the Government has brought in a computer.

The Bene, launched last year, is a hand-held machine which was originally designed to work out people's housing benefits. Now the tiny machine has been customised to deal with the thousands of claims for community charge rebates.

Bene is already used by social workers, citizen's advice bureaux staff, housing officers and welfare rights officers.

The Institute of Housing, which originally bought the machine, says it saves loads of time and cuts down the rate of error in calculations. The machine itself costs £85. ■

Cheaper together

Two companies have teamed up to release low-cost expansion boards and other peripherals for the Amiga.

Speed Computers and D S & K Designs kick off with a reduction on their 512K expansion card. That's down from £60 to £49.

The companies realised that they could buy components from the Far East at rock bottom prices if they bought in bulk. The price problem stems from import levies imposed by the EEC on such products. Call 09323 52277. ■

STOP PRESS

COMMS FRAUD: 13 HELD

As *Express* went to press, police and British Telecom officials released details of a nationwide swoop on alleged comms fiddlers.

Thirteen arrests were made around the country by the Number 5 Regional Crime Squad. The police said they seized a large amount of electronic equipment including computers and software. All those arrested were males aged between 18 and 40.

Police say they had been at the centre of a ring which distributes 'meter suppression' devices design to evade BT's telephone charging system. This practice is known as 'phone phreaking'.

It is believed that a number of those arrested were heavily involved in the bulletin board scene. Police said they had "computer interests".

Detective Chief Inspector Roy Paine said that more arrests are likely. The 13 arrests, made at dawn last Thursday, took place in Glasgow, Newcastle, Liverpool, Sheffield, Leicester, Hemel Hempstead, London and Worcester. It was the culmination of a nine-month investigation and was called Operation Southall. ■

• Next week the full story. We'll be talking to those involved and analysing the implications for the comms community as well as investigating the phenomenon of phone phreaking.

Bravo Victor

Victor has slashed prices across its whole PC range with prices dropping by up to a third on some models.

The popular 12MHz 286 portable with 30Mb hard disk is reduced from £2,499 to £1,999 and the battery powered V86P dropping from £999 to £699. The 20Mb hard disk version plummets from £1,499 to £999, a drop of 33 per cent.

More expensive models see their prices cut with a massive chop of £1,700 from the price of the V386T/33 making it a good value £4,999.

Victor attributes the price cuts to economies of scale and the prices are effective immediately. For more information on the prices and machines call Victor on 04944 61600. ■

Psion of the times

Hungary, hungry for Western technology, turned to Psion for a portable computer to validate and cross check the first free elections for 40 years.

Returns from the country's 11,000 polling stations were checked overnight at 150 central counting centres and discrepancies were easily identified. The computer used was the Psion Organiser 2 with specially written software. ■

A3000 now costs only £100 more than 1040ST

ARCHIMEDES PRICES CUT IN ACORN THRUST

Acorn has cut the prices of its Archimedes RISC-based range in a further effort to woo computer buyers away from the ST and Amiga.

This news comes only days after the announcement of the home-education bundle The Learning Curve, an A3000 bargain pack taking the National Curriculum into the home.

The A3000 has been cut by £50 to £599, bringing it ever closer to the Amiga and ST market. The higher priced Archimedes range shed excess price as well with the A410/1 coming down £100 to £1,099. The A420/1 drops £200 to £1,499 and the top of the range A440/1 with 4Mb RAM and a 50Mb hard drive drops £300 to £2,099.

A little closer to the needs and pockets of the many is the BBC Master 128 which has been trimmed of a surplus £40 to take it to £399.

Acorn is hoping to maintain its strong position in the educational market while pricing the hardware closer to the competition in the home. There are commercial high hopes too, with the A400/1 seen as the machine to penetrate the professional world.

Acorn has long suffered a reputation for launching machines which are too highly priced for the intended customer base. But now the A3000 now costs only £100 more than the Atari 1040ST. Given that the Archie is more than four times faster than the ST, and that it is a multitasking machine, this may be regarded as a good buy.

As the prices are falling, Acorn is planning a Regional Roadshow. It will get together with software developers to tour the country meeting people who can't reach the shows in London, and giving them a chance to see the machines and their software support. ■

• A3000: down in price to within striking distance of the ST and Amiga.

BAT BONUS BUNDLE ON VIDEO

• This week thousands of VCR owners will be scuttling off to the local videodrome and hiring Batman. And when they've booted up the VCR they'll be offered the chance to win one of ten Amiga machines. It's just the latest in a number of link ups between Commodore and Batfirm Warner Brothers. At the start of the tape viewers are offered two riddles to solve together with a tie-breaker. Winners will receive the Commodore A500 Batman Pack.

CBM UK boss Steve Franklin enthused: "Batman and the Commodore Amiga are two great success stories and by combining them I'm sure that we'll score a huge hit with the viewers." ■

Work works any way

ABC's integrated business software *Work 1* can emulate the keystrokes of any word processor, making it a must for a small businessperson or home user.

It contains a word processor, spreadsheet, filing program and a pop-up jotter containing a notepad, agenda organiser, calculator and typewriter. But it's the keystroke emulation that the firm hopes will make customers flock in.

Unlike many of the 'user definable' programs currently available, *Work 1* can hold the key maps of several applications in a utility file and swap between them. A secretary trained on *WordStar* could start a document, and in seconds, another person trained in *Protext* could change keymaps and complete it. This could be a godsend in a small office where temps are used, or to emulate the office word processor at home.

No price has been set but will be in the order of £200. For further details speak to ABC on 061-236 9065. ■

ASA raps more micro firms

This month's Advertising Standards Authority report is once again peppered with complaints concerning computer related companies.

The ASA upheld one complaint against retailer Comet, which advertised the Amstrad PC1512 but could not then supply a customer with any kit. There was another complainant who bought a Schneider 'IBM compatible' PC from Greyhound Marketing but found it could not run an IBM fax card on the machine without the aid of an expansion board. That complaint was upheld.

The Sales Curve was rapped for a delay in organising a competition prize in *The Games Machine* magazine. *Commodore User* also found itself in trouble for a similar difficulty. However, both companies explained to the ASA that circumstances, rather than neglect, had caused the delay. ■

Extend your Amiga

HiSoft has launched a standard Amiga library that can give you access to a multitude of useful widgets, gadgets and routines.

***Extend* allows you access to all other libraries and gives direct library access from BASIC.**

Features include IFF picture and sound support, including HAM and four-channel sound control. Font support is included with underlining, bold and italics all available.

It will run on any 512K Amiga and comes with a 128-page manual. It costs £19.95 More information from HiSoft on 0525 718181. ■

Hooray for Henrietta

Henrietta, Hopeless Henry and John the Parrott join together in *Hooray for Henrietta*, a program designed to help children of all ages with literacy and numeracy.

They must solve randomly set problems to avoid John the Parrot spoiling Henry and Henrietta's wedding.

Available now for the Spectrum and IBM. More information from Scetlander on 041-357 1659. ■

Hong Kong phooey

Has anyone been watching Yorkshire Television's new and thoroughly thrilling television series *Yellowthread Street*?

Oh well. Apparently, it involves some badly-dressed police people chasing unsavoury drug peddlers around the violent and uncompromising streets of Hong Kong.

Now software publisher The Edge has had the brilliant idea of turning this 'highly successful' TV show into a computer game. It won't be here until the autumn. ■

Secret gambling machine baffles Las Vegas

COMPUTER WHIPS ROULETTE WHEEL

An extraordinary real-life story in which a group of computer science students design a hardware system capable of beating the roulette wheel is detailed in a book launched next month.

The Newtonian Casino follows the five-year research program undertaken by students at the University of California. Their plan was to design a computer which could be used in a casino without the owners knowing.

The computer had to work not on the theories of probability and chance, but on Newton's Laws of Motion, as well as theories of chaos, friction and 'applied randomness'.

The computer system cost hundreds of thousands of dollars to perfect – but it works at a impressive 33 per cent success rate.

The students finally came up with a tiny computer which could be secreted in the sole of a shoe. By making a series of toe-movements the shoe-wearer tells the computer where the roulette ball rested as well as making a few other adjustments. That data is then transmitted to a computer in a partner's shoe. Via pulses in three solenoids in his sole, the gambling partner can pick up the prediction and make his bet.

The computer itself is based on a CMOS 6502 microprocessor with 5K of RAM – the same chip that lurks inside the BBC and C64 micros. The designers grafted in a further 4K of memory.

It predicts the final position of the ball by calculating coefficients of friction and drag as well as subtle adjustments for changes in velocity and such like.

In effect, the computer plays out the game hundreds of thousands of times faster than the real wheel and can therefore predict the most likely outcome.

The students began gambling with the machine in Las Vegas in the early 1980s before announcing their breakthrough. They say they made a profit but won't say how much.

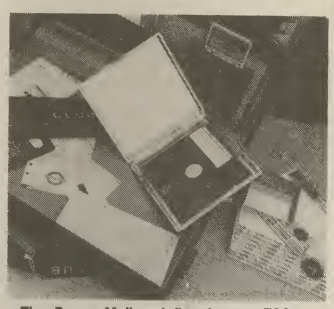
In the meantime the State of Nevada has outlawed such devices with sentences of up to 10 years in jail.

The Newtonian Casino was written by the project head Thomas A Bass. It will be published on May 21 by Longman. The price is £12.95. ■

Take a disk for a ride safely

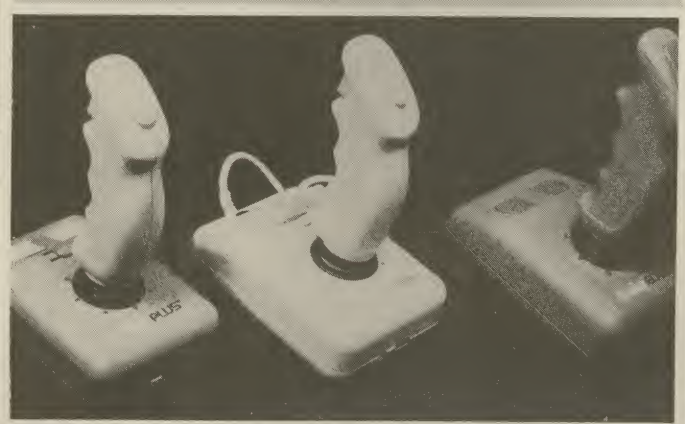
Now you can take your floppy for a ride on the tube, or for that matter anywhere with a high electromagnetic field, thanks to a dynamic new bag from Accodata.

The Accodata Perma Mailer claims to drastically reduce the detrimental effects of magnetic radiation on stored data and can provide protection for disks in the mail. Each holder can take up to four disks and they are available in 3.5-inch and 5.25-inch sizes. The price is £2.45 for the 3.5-inch and £2.95 for the 5.25-inch. Call 0732 885555. ■



• The Perma Mailer: definitely not a Z88.

TOUGH ON PC GAMERS



• Two analogue joysticks for the PC have just been launched with the bold claim that they will revolutionise the joystick industry .

Suncom Technology's IRT Analogue Xtra and the IRT Analogue Edge use injected resistor technology, which the manufacturer claims will be more durable than the conventional potentiometer type. Potentiometer joysticks have been the mainstay of the analogue brigade over the last few years, but were never designed for the rigours of modern gameplay. For more information call 0453 753565. ■

• Teletech's phone sharer.

Phone switch

Sizzling Danish firm Teletech has released an intelligent switching device called Lineshare 11-0400 that allows your modem to share a voice line.

The unit listens to the incoming call and if it detects an incoming modem, it automatically transfers the line to the computer. If it isn't a modem, Lineshare transfers the call to a voice line and rings the telephone bell. A button allows all calls to be routed to the modem.

Call 010 45 4281 7029 (fax). ■

Audiogenic coins it

Audiogenic Software, one of the oldest games publishers in the industry, is to launch its first ever coin-op conversion.

***Exterminator* from Gottlieb is an arcade game of the old school with lots of incredibly nasty insects to avoid and nice things to pick up. But Audiogenic reckons it's lots of fun. "Gameplay is the key element of a good game," said boss Peter Calver. "*Exterminator* not only looks different, it's great fun to play." It will be launched on all major formats in the autumn.** ■

Bond goes back in time

• Right: Bond back in action in 1977

James Bond is set to return to the world of computer games thanks to enthusiastic 007 firm Domark.

***The Spy Who Loved Me* is the latest in a string of Bond games dating back to 1986. Like its predecessors, the game will borrow heavily from the most exciting scenes of the corresponding movie.**

Bond buffs will remember that *The Spy Who Loved Me*, released in 1977, featured Roger Moore tracking down two stolen nuclear subs. He's attempting to stop the thoroughly unpleasant and extremely greedy Karl Stromberg from making a mess of New York and Moscow by launching nuclear missiles at the cities.

And, when he's not being cool with a Lotus Esprit and dinner jacket, he's canoodling with deadly Russian spyette Anya Amosova.

In the game it's up to you to put an end to Stromberg's capers. *The Spy Who Loved Me* will be launched in the autumn for the PC, Amiga, ST, C64, Speccy and Amstrad. ■

• The first All Formats Computer Fair, but lesser machines were ignored.

All Formats means all formats

The organiser of the All Formats Computer Fair says he wants the show to live up to its name.

Generally pitched as an event for bargain hunters, the first fair saw thousands of eager computer owners scrambling for cheapos.

But there was a distinct lack of goodies for owners of lesser known machines. To put this right organiser Bruce Everiss has set up 'villages' within the fair.

There will be special sections for the QL, Z88 and SAM Coupé for the April 28 and 29 fair and the following fair, on June 9 and 10, will also have sections for the Archimedes and MSX. The shows will be held at the Royal Horticultural Halls in London. Call 0926 640137 for more details. ■

MiniScribe in auction bid

MiniScribe, one of the largest disk drive manufacturers in the world, has gone bankrupt and is at the centre of a $40 million asset bid.

Californian firm Maxtor says it wants to pick up the pieces of the company, and is particularly keen to acquire manufacturing plants in the Far East.

Maxtor is also negotiating with MiniScribe's creditors to ensure the firm gets a supply of components needed to continue manufacturing while the auction of the company goes ahead. ■

US anti-hacker team unaware of Aussie swoop

HACKERS LINKED TO INTERNET INTRUSION

Three Australian hackers were arrested last week following an 18-month investigation by the country's secret police. They face prison sentences of up to ten years each under Australian computer crime law.

The three Melbourne-based hackers are accused of being involved with the recent attacks on the sensitive US Internet system (*Express* 73). However, details at present are scant.

The Internet computer network can be accessed anywhere in the world, and supports hundreds of thousands of computers installed in universities, military installations and governmental laboratories. Systems penetrated include those of the Los Alamos National Laboratory and Digital Equipment Corporation, as well as Harvard University, Boston University and the University of Texas.

US authorities have been tracking Internet hackers since January of this year, and were surprised to discover that the arrests had been made without their knowledge.

The network attacks themselves are believed to have started in November of last year.

It had been assumed that the work was that of a single hacker, but on investigation it was discovered that the Internet hack was accomplished by a group of hackers operating outside the US. They had been infiltrating the network's computers with a 'smart' Trojan horse that makes use of well-known security flaws in the system.

An inside investigator suggested that the group was after any source code for other viruses, worms and Trojan horses.

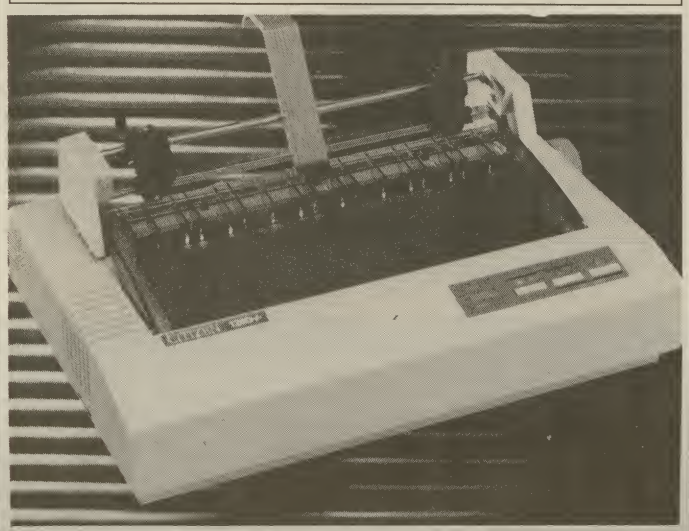
Terry McGillen, spokesman for the Computer Emergency Reaction Team (CERT), a US-Government-funded operation, said that the damage done by the program was minimal.

He told *Express*: "We confirm that several dozen sites have been broken into, and that the intruder is trying to get into other sites.

"We don't call them hackers. We call them intruders." He declined to comment further on the matter.

Investigations are still going on with British security experts, and an ex-hacker advising CERT. ■

CITIZEN UPGRADES BUDGET PRINTER



• Citizen has crammed more bells and whistles into its already successful 120D printer, but held the price at £199.

The Citizen 120D Plus now has two NLQ fonts on the control panel, NLQ in IBM emulation, a quad print option and all the features found on the 120. It is manufactured right here in the UK in Scunthorpe and more information is available from the Citizen Customer Response Centre on 0895 72621. ■

Can you catch Carmen?

Carmen and her cohorts have emptied a treasure warehouse, snaffled the Sphinx and left the Statue of Liberty torchless. In a series of 'shedunnits' from Broderbund, fictitious Carmen and her merry men plunder the globe for its booty and only you can take up the trail and get her bang to rights.

The trail starts at the scene of the crime and leads you through a series of clues to capture the culprits. There are three Carmen Sandiego scenarios: *Where in the World is Carmen Sandiego?*, *Where in the USA is Carmen Sandiego?*, and *Where in Europe is Carmen Sandiego?*. All titles are available for IBM, Amiga and Mac at £34.99. Available in the UK through Domark, *Where in the World?* is out in May with the others following close on its heels. More information from Domark on 01-780 2222. ■

COMMENT

The brouhaha surrounding MGT and its recently-released SAM Coupé is not necessarily disastrous – nor is it an uncommon problem.

MGT presents an easy target with the catalogue of problems that the SAM Coupé has trailed through the media. Its late arrival, faulty DOS, and current system ROM bugs are just three to whet the appetite.

Before we sharpen our knives and gnash our teeth at Messrs Miles and Gordon, it is worth a look at the track record of some of those who eagerly gloat from today's touchlines.

For those of us old enough to remember the days when a computer meant an air-conditioned building the size of a football field, there is the case of the grand daddy of them all – IBM.

That giant of computing has had a history of errors too, with mainframes with processors too small, upgrades that made peripherals obsolete, and a pricing policy that made leasing a must and married customer to IBM with a bond stronger than any spot weld.

That was far away in the dim and distant Sixties, but time doesn't change anything. When Sir Clive Sinclair astonished the world with his one-kilobyte wonder, the ZX80, he astonished his potential customers even more with the several months that they had to wait for the product after the cheques were cashed.

With the upgrade to the ZX81 the wait got longer, and it wasn't until someone thought of adding more memory that the computer became usable.

The Spectrum followed, bringing its own share of bugs and delivery delays, and with it brought the well-thought-out rubber keyboard with the positive feel sometimes compared with pushing your finger into a sponge full of treacle.

It took them years to cure that one, if you count adding a proper keyboard as part of the solution.

To complete the Sinclair fiasco there was the Microdrive phenomenon. This caused problems for the Spectrum, QL and the joint ICL one-per-desk project. The Microdrive cartridges couldn't be guaranteed to hold the same amount of data twice, and ultimately became to computing what the eight track is to stereo.

Commodore entered the world of space heating with a C64 power pack that made a good storage heater and a cassette unit with a fail rate best compared with the Lockheed Starfighter.

Alan Sugar upset a good many of his customers when he announced the disk drive 664 only to replace it a couple of months later with the 6128 that had twice the memory, and more features, for the same price.

The Amiga went through a memory compatibility identity crisis and a less than robust operating system still causes the guru to visit.

Finally and most recently the Atari ST has gone through many metamorphoses, but the advent of the STE brought more incompatibility, with Atari blaming everyone but Atari.

The PC has had more bugs than Kew Gardens, and with each better system comes better bugs.

Indeed, we feel that the best course of action is for MGT to take heart: the 15 or so examples above show that we're not all perfect, that there are bugs in everyone's garden, and that with a corporate stiff upper lip many companies have managed to brazen it out and weather the storm.■

FROM The ARCHIVE

ONE YEAR AGO

Amstrad's gameplan that aimed for domination of the PC market was dogged by a spate of hard-disk problems brought on by a fault in MS-DOS 4.

Amstrad was quick to point out that the fault originated with Microsoft, while also claiming that the problem hadn't managed to get as far as the customers.

An amended version of MS-DOS 4 was sent to dealers, and all at the palaces just outside Brentwood lived happily ever after.

Steve Jobs' much-publicised NeXT workstation – heralded as the logical progression upwards from the Mac – was ready for release in the US.

Not much joy this side of the Atlantic, however. The matt black machine took over 11 months to wing its way across the big pond to the shores of the UK.

American firm MicroProse made approaches to and then gobbled up Telecomsoft in a deal that included over 180 games on the very popular Rainbird, Firebird and Silverbird labels.

Alternative fanzine *The Bug* finally drew down its portals after 36 issues, not because of financial hardship, but to allow its esteemed writers to pack up and get off to university.

Acorn was back in the black with a profit of £1.6m to the previous December.

This success astounded critics and was heralded as a new beginning when compared to a £2.4m loss for the same period of the year before.

Console giant Nintendo went out on a limb to claim that the Russian game *Tetris* could become the most successful US licence of all time.

TWO YEARS AGO

The Gallup All Formats Chart finally gave up its top 10 places to budget games. The chart looked thus:

1. *Ghostbusters*	Ricochet
2. *Steve Davis Snooker*	Blue Ribbon
3. *Exploding Fist*	Ricochet
4. *GP Simulator*	CodeMasters
5. *Kik Start 2*	Mastertronic
6. *BMX Simulator*	CodeMasters
7. *FM Simulator*	CodeMasters
8. *Soccer Boss*	Alternative
9. *Popeye*	Alternative
10. *Super Stuntman*	CodeMasters

The Advertising Standards Authority gave Amstrad and Commodore a caning for innacurate national media campaigns.

Amstrad was ticked off after claiming that 'there [was] a vast universe of games to choose from' in its Spectrum Plus 3 campaign.

The body upheld that 31 games on disk did not, in fact, represent much of a vast universe.

Rapped knuckles were also dished out for Commodore's Amiga advert which didn't make it clear that extra hardware was needed to drive video and photographic images.

SIX YEARS AGO

Ex-car aerial salesman and recent hi-fi importe, Alan Sugar entered the UK home computer market with the CPC 464, his first computer 'designed to a price'.

Six years later, plans have surfaced to upgrade the whole CPC series for the 90s, guaranteeing the 464 a further lease of life.

Released in the UK for the first time was US businessman John Bear's book *Computer Wimp*.

Subtitled '166 things I wish I had known before I bought my first Computer!' it was a jokily-written well-illustrated biography of the pitfalls facing the unwary computer buyer.

Some public libraries still hold it in stock, and it's worth a look: ISBN 0-09-158831-6.

Sources: New Computer Express, Computer Weekly, Computer Trade Weekly, Microscope, PC Dealer, Computer Talk, Datalink, Computer Wimp.

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ACCESS VISA

XWINDOWS ON DOS

There are two main contenders for the multi-tasking, graphics PC environment: OS/2 with Presentation Manager and Unix with some form of windowing. Currently, there has been far less take up of OS/2 than its supporters would have wished and Unix is still seen as the province of the multi-user in corporate business. There may well now be a third contender, however: *Desqview* and X.Windows.

Quarterdeck is rumoured to be ready to release a new version of its multi-tasker *Desqview*, complete with an X.Windows front end. This would give a similar sort of graphic, windowing environment to DOS as Windows is trying to do and PM is hoping to do for OS/2. The advantage, as Quarterdeck sees it, is that the X.Windows approach would provide a front end identical to that of an equivalent Unix terminal. When the user expands in that direction the hardware will change – but the interface won't.

There is certainly a need for a decent upgrade to DOS, which is looking increasingly long in the tooth. Indeed, it seems inevitable that any new system adopted by the market will be multi-tasking and Quarterdeck has already presented its credentials in this area with the only effective multi-tasking utility under DOS – I still feel Windows is too slow to be used seriously, though Windows 3 may make a difference.

Quarterdeck won legal title to 'DOS windowing products' last year, which could be seen as giving it a way to curb Microsoft's plans for Windows. Whether the title is actually worth anything remains to be seen – it would cost so much and take so long to establish any case against MS that it could well prove counter-productive. Quarterdeck would certainly have a stronger argument in its favour, though, if it had a product in its stable, capable of rivalling Windows.

To market a DOS product with an interface identical to one of the two main multi-tasking OS contenders seems pretty clever; it remains to be seen whether Unix actually picks up the gauntlet slung down by OS/2, lowers its visor and unseats the Black Knight in the next round of the joust.

CUT-PRICE DATA

At the risk of over-burdening this column with the outpourings of GST's super-efficient PR organ, it's worth mentioning that the GEM-based *Data Manager Professional* has been cut in price.

This relational database was already good value at £69.95. Now the price is £39.95, and it would seem to be one of the front-running budget databases. I've already quoted GST's number this week – read the piece on *DESKpress* (right)!

A LA CARTE

If you find DOS a continuing bore and want to get more out of your machine than 'Bad command or filename' errors, you need a menuing program. These utilities hide DOS away from you, showing you lists of menu options for your most used applications instead.

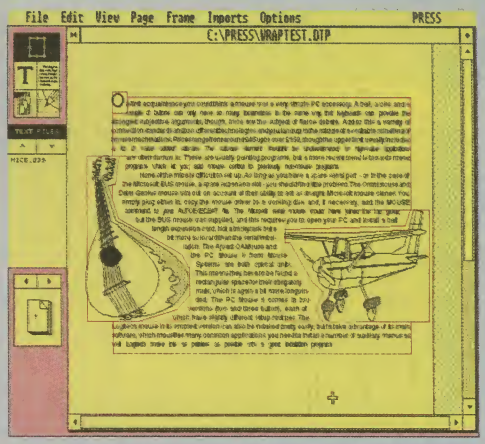
You could have, for instance, a menu offering word processor, database or spreadsheet, or a sub-menu offering a group of data files. Selecting one of these files will then run the application which created it and load the file in.

One of the best known menuing systems is *Direct Access* and the latest version of this, 5.0, is now available from the Ctrl Alt Deli. Priced at £68.95, the program also offers a work log, showing how long you spent on a particular job, password security and virus checking. The work log is particularly useful if you sub-contract for other companies and need to bill your time hourly.

You don't need anything special to run *Direct Access* and it isn't memory resident, so it doesn't take room from other applications. Ring CAD on 0908 662759 for more details.

Simon Williams

IMPRESSED WITH DESKPRESS



At the end of February I was invited by the folks at GST to see a development version of the new desktop publisher package, *DESKpress*. I found it very exciting, a feeling strengthened since I've been using the software on review.

GST is touting *DESKpress* as a 'one-per-desk' product for corporates, hoping to fill the gap between the budget programs, like its own *Timeworks Publisher*, and the heavyweights *Ventura Publisher* and *PageMaker*. While few companies could justify the high asking prices of these two, they may well be able to afford the £320.85 asked by GST.

I also feel the company will sell a many copies to those wanting to upgrade from *Timeworks*. The product is based around the same graphics engine and will feel very familiar to anyone who has used the earlier product.

It has a lot of extra facilities, though – most aimed at office users. *DESKpress* can produce indexes and tables of contents automatically, can number and indent paragraphs – giving a limited outlining facility – and can import text and graphics files from a wide variety of sources.

The styles and controls applied to text in the program can also be embedded into the text while it's in a word processor, by enclosing a series of command abbreviations in angled brackets. *DESKpress* can export to any of the word processors from which it can import, so formatted text can be freely moved between the two applications.

On the graphics and typography side the most interesting innovation is the ability to wrap text around graphics. Any graphics frame can now have its edge altered to the profile of the graphic it contains. This is a very versatile technique, though you can't as yet split a piece of text to flow round both sides of an embedded image.

***DESKpress*, which will be released at the *Which Computer?* Show later this month, comes complete with three volumes of documentation.**

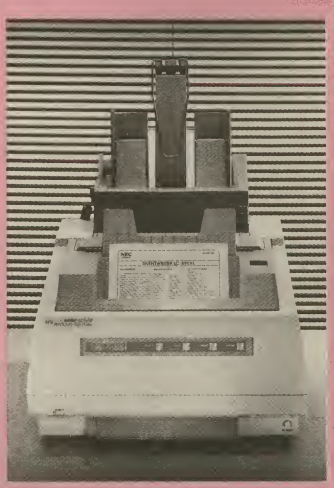
For more details, ring the good people at GST on 0480 496660. Tell them the PC column in *Express* sent you!

PROOFING RUN

Some while ago I outlined a problem concerning the printing of proofs on a laser printer. If you need to print a proof to check the contents of a page before printing a number of copies, you have to wait twice for the page to be made up. Even though the page must be correctly created in the printer's memory to get the proof copy, there's no way of saying 'Fine – use that image and print me another 10'.

Future's Mac and network guru, Ben Taylor, came up with a partial solution the other day. Empty the paper feed tray of all but one sheet of paper. Get your application to print the full 10 copies and after printing the first, which is your proof, it will halt for lack of paper.

If the proof is OK, replace the paper in the tray for the rest of the print run. If not, reset the printer and then replace the paper. This works, but couldn't the big boys find a more elegant solution for future models?



• A trick is fine and dandy if it gets the job done – but how about some software?

FULL METAL PLANET

PC GAME of the WEEK

Infogrames • £24.95

A game's got to have something to carry off a name, and certainly *Full Metal Planet* shows promise. It is based on a French board game which, if the computer version is anything to go by, must have a horrendously-complicated rule book. Thankfully your computer takes care of all that in the conversion.

Full Metal Planet, as its name suggests, is set on a planet rich in ore. You aren't the only prospector around unfortunatley so you've got to mind your back as well as collect the nuggets as fast as you can.

Up to four players can take part, each either human or computer-controlled. You start by landing your freighter in a promising spot and deploying your various units, including Barges and Crabs for collecting ore, a remarkable device called a Weather Hen, which can transform ore into new units on the spot, various Destroyers, and pontoons for bridging land masses.

The game is played on a hexagonal grid, marked out into land, sea, swamps and reefs – the planet is tidal so the swamps periodically become sea and the reefs land, with disastrous consequences for any boats or tanks in residence. Play is enhanced by a number of unusual rules, which make for more interesting tactics.

Unfortunately the computer version is spoilt by a poor manual, a command system that relies far too heavily on icons, and windows that make a habit of popping up right over the action. It also refused to run under MS-DOS version 4.01 for some reason, though it was perfectly happy under version 3.3.

Worth persevering, if you like this sort of game.

Matt Nicholson

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PC 20	HD20	675	799	846	929

(As PC 10 SD but includes hard disk drive)

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		MONO £	VGA MONO £	VGA COLOUR £
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SAMSUNG (monitor not included)

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8088; 4.77/10mhz; 640K ram; 6 slots; serial/parallel ports; clock; 1x 1.2mb drive; MS DOS 3.3; GW basic and manuals.

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SPC 3000/1 SD	410	519
SPC 3000/2 DD	473	581
SPC 3000/3 HD20	676	784

80286; 8/12mhz; 1mb ram (exp. to 5mb); 5 slots; serial/parallel ports; clock; 1x 1.2mb & 1x 1.44mb drives; MS DOS 3.3; GW basic and manuals.

	VGA £
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MONO VGA	PHILIPS	BM 7749 FST	12" p/w	107
MONO VGA	AKHTER	VGA 14M FST	12" p/w	99
MONO VGA	SAMSUNG	ML 2611	12" p/w	81
MONO VGA	SAMSUNG	ML 4571	14" p/w	95
MONO A4	SAMSUNG	MP 5671(inc. card & drivers)		634
CGA	PHILIPS	CM 8833	14"	209
EGA	PHILIPS	CM 9073	14"	289
EGA	SAMSUNG	CM 4551	14"	281
VGA	HYUNDAI	HDM 401 FST	14"	253
VGA	PHILIPS	3CM 9809	14"	372
VGA	SAMSUNG	CJ 4581	14"	281
VGA	AKHTER	VGA 14	14"	273
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EDSOFT MOUNTS UP

The educational software field appears to be enjoying something of a boom. *ST Format* has just tested nearly 40 programs currently available for children and found some excellent material for the May issue, out today (Thursday).

Yet, at the last count there are very nearly the same number of new releases announced for the month to come! Our good work never ends.

Also look out for the soon-to-be-forthcoming spectacular on educational software that will be hurling your soon through the pages of this very magazine in about a fortnight.

PROGRAMMERS' GLASNOST

My mole at the recent Atari developers' conference at Didcot (see *Express* news, last week) tells me that Atari is admitting that it hasn't always done everything it could to encourage programmers to work on the ST.

With the re-launch of its programmers' help scheme (in fact it's been going for at least five years), the end result should, ultimately, be better designed, programmed and implemented programs. And perhaps an avoidance of the STE incompatibility saga, with the attendant bad press that Atari so plainly found embarrassing.

TOP SPEED DRIVING

A company new to the world of STs has released a brand new hard disk that runs at an incredible 18ms. Using a Rodime unit and starting at £599 for a 40Mb drive, the Fountain is the same size as Atari's own Megafile unit. Digital View is at 11 Portland Place, Edinburgh EH6 6LA, or call 031-554 5868.

STOS AUTHOR IS BACK

If you're an STOS programmer you'll be delighted to know that Stephen Hill, who wrote the manual, has published the 296-page *Gamemaker's Manual*, featuring everything from game planning and graphic design to flight simulations and role-playing games.

The book is published by Sigma and is available, as they say, from all good bookshops. Ring Susan Barry of John Wiley and Sons on 0243 770318 if you've been banned for life from your local bookshop.

PACK OF NOTES

Evenlode has a new GCSE-based music package, *MusiCAL*, that is suitable for anyone wanting to start with the basics of ST music, whether or not they possess a MIDI instrument. *MusiCAL* costs £39.95 from Evenlode: 0993 89228.

Still on the musical theme (geddit), Ladbroke Computing's *MIDIstudio* is now an updated package called *MIDIstudio Master* with 100-track recording, pipelining, loading of system exclusive data, real-time front end mix-down and much more. Upgrades for owners of *MIDIstudio* are available, and the new program costs £129.95 from Ladbroke, phone 0772 203166.

ULTIMATE DESKTOP

HiSoft has announced *Harlekin*, perhaps the ultimate in desktop accessories. Shown at the European Computer Trade Show, the program – which originates in Denmark (where they do a surprising amount of stuff for a country that has so few inhabitants, and indeed STs) – has just about everything you could ever need, from memory monitor, RAM disk, disk formatter and copier right up to and including a word processor, a very cunning scrapbook, diary and calendar. Indeed the chaps at HiSoft were busily discovering new aspects to the program all the time.

The scrapbook is particularly impressive, for it enables you to create cards and notes of unlimited size, each card having its own (optional) icon and capable of being shown as a list or, optionally, as a calendar.

The only drawbacks to *Harlekin* are that it needs a 1040 or above to run on, and is currently in mono only, though a colour version is expected. *Harlekin* comes in at the reasonable cost of £49.95 from HiSoft: 0525 718181.

Incidentally, keep your eyes peeled for references to HSB, claimed to be HiSoft's ultimate Macintosh emulator for the ST. It's an elaborate hoax, not entirely unconnected with the date of the press release: April 1st.

PD UPDATE

I've just received the latest catalogue update from the South West Software Library, containing some 80 new additions. Highlights include *Hype!* (disk 777) – billed as the first ST hypertext program (mono only); *Addprint* (disk 705), a mono address book and label printing desk accessory; *Desktop Diary* (disk 723), an original application of the *Deskpic* program to change your Desktop into a Degas pic (colour only); and *Can You Spell?* (don't answer that: disk 751), a talking spelling tester program (colour only – not STE happy).

Disks cost £3 each, and place and to order or request a catalogue write to The South West Software Library, PO Box 562, Winbourne, Dorset BH21 2YD.

Steve Carey

SECTOR NEWS

Stevenage citizens Michael Kirk and Darren Friston have opened what I conservatively estimate to be the 1,000th new ST public domain library of 1990. Called, rather neatly I thought, The Public Sector, it features a not-bad-at-all range of ACCs, demos, including the three disk *Batman* movie demo and a fair amount of stuff ripped off old *ST Format* cover disks (but they give the mag a good plug so I don't mind really).

Prices are £2 per disk, including post, packaging, VAT and poll tax contribution (obligatory), and you can get yourself a free catalogue for the price of a stamp simply by sending an SAE to: The Public Sector, 50 Ripon Rd, Stevenage, Herts SG1 4NA. Good luck, chaps!

IT'S JUST LIKE CHILD'S PLAY

Still on the subject of the ST's rising popularity as an educational machine, D A Brumleve, the American creator and publisher of *Kidpublisher Professional*, has added two new programs to his range.

Kidpainter is a 'creative graphics design' program (to differentiate it from uncreative ones, presumably), that is said to offer 'unique experiences in patterns and color' ('scuse the American spelling – it's catching I'm afraid).

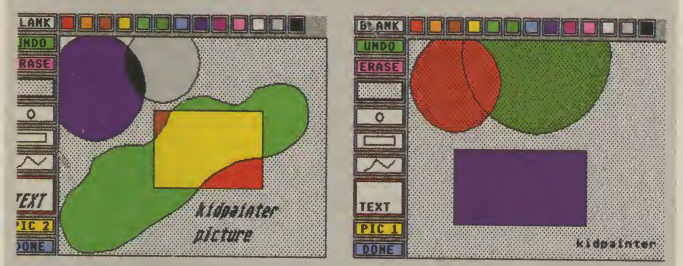
The program begins with the drawing screen from *Kidpublisher Professional* and goes on to add a text option, additional fill patterns, solid fill colours, horizontal and vertical mirror-imaging, 'blind' drawing, a stamp maker option, an on-screen puzzle creator – a whole plethora, in fact, of entertaining activities for your budding artist or mathematician.

As with *Kidpublisher Professional* (wish they'd give these things shorter titles) it's bright, friendly and above all simple program that should keep your child entertained as she or he learns. It won't provide much competition for Degas *Elite*, *Spectrum 512* or *FlairPaint*, but it's not at all bad.

The other new Brumleve program is *Super Kidgrid*, for creating colour patterns and shapes. I can't see it getting any budding painter very excited, however, for it simply offers sets of shapes for filling in with colours.

Kidpainter, for children aged 5-11, and *Super Kidgrid*, for 3- to 11-year-olds, are non-copy protected, and indeed you're encouraged to copy them for all the children in the house or school. Each costs the current equivalent of $25 (better move fast while the dollar is still worth less than the pound). Contact D.A. Brumleve, PO Box 4195, Urbana, Illinois 61801-8820, USA.

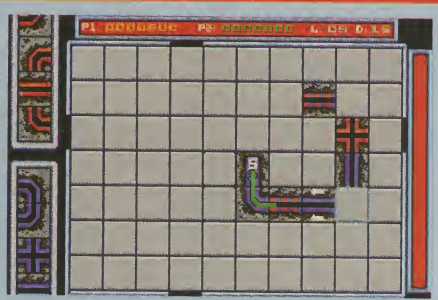
On the other hand, since you're an ST user yourself, you could simply buy one of the several excellent art/graphics packages available for the machine, learn it for yourself and then teach your child.



• *Kidpainter is designed to be an educational tool for 5- to 11-year-olds.*

ST GAME of the WEEK

PIPE MANIA



EMPIRE • £19.99

Once in a while there's a game style which is so fiendishly addictive that it's completely impossible to put down. *Arkanoid* was the last time we saw anything as menacing as this on the ST, but now Empire has come up with *Pipe Mania* which is equally challenging and addictive.

The game started life in the UK just over a year ago, but American-based film company Lucasfilm expressed an interest at the end of last year, made many modifications to the visuals and sound effects before releasing its own version in the States. When you see Lucasfilm's name on the packaging, don't imagine it's a mega-bucks classic.

The objective of *Pipe Mania* is to complete a series of levels by piecing together sections of pipe so that water can flow through.

The pieces of pipe are shown down one edge of the playing screen.

These can be straight lengths, left or right bends or crossroads. Each piece drops down a shute, appearing at the bottom. The playing screen is made of squares and you must place that bottom piece somewhere on the screen.

You have a limited amount of time to link all the pieces before the water starts flowing. You can continue to position pieces of pipe until the water reaches the end of your pipeline. If you've placed enough pieces, you then advance to the next level.

As the game proceeds, extra pieces of pipe are tossed in to make things harder. One-way sections have an arrow over the top and must be positioned carefully so that water flows in the direction of the arrow.

There are also reservoirs and restricted pipes laid on the playing screen. If you build these into your pipeline you receive extra points and the flow of water is slowed down, giving you longer time to lay new pieces.

No game has been released this year which can equal *Pipe Mania* for addictiveness. The game might sound hopelessly silly and admittedly it has no depth to it whatsoever, but once you start playing, you won't be able to put it down.

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AMIGA

FAX FACTS

Along with the portable phone and Filofax, the fax machine is another of those all-important accessories for the decerning yuppie. But as anyone who has tried to buy one will confirm, fax machines are notoriously expensive things. However, the advantages of these wondrous machines are numerous.

In basic terms, a fax machine is nothing more than a glorified scanner with a built in modem – when you feed in your document, the fax machine simply digitises the document, transmits it to another fax that then reconstructs the digital data into a human readable form.

As you will appreciate, there's no real reason why your Amiga couldn't handle the job of a fax with ease. PC users have been using 'Fax cards' for a long time, but until now, none were available for our beloved machine.

Michtron UK (Microdeal) has announced the release of Fast Fax, the first fax card for the Amiga (see News, *Express* 74). Fast Fax simultaneously converts and translates graphics, letterheads and signatures along with text directly from disk using its own built-in 68000 processor and 32K of RAM.

When Fast Fax receives a fax it is saved to disk. This file can then be viewed on screen, using Fast Fax's powerful software. If it's a hard copy that you require, your Fax can be dumped out to just about any Preference-supported printer. Furthermore, because Fast Fax supports the IFF file format, faxes can be loaded and manipulated within just about any Amiga art package. For more information, phone Microdeal: 0726 68020.

PUTTING THE BOOT IN

Constructing a bootable disk that loads Workbench can be a real pain if you only got a single drive, but for those of you with extra drives, the process is made considerably easier. To make the task even simpler, the AmigaDOS batch file below creates a disk that will boot to Workbench.

Just type it in using a text editor such as *Ed*, insert the disk to be constructed into drive DF1:, your Workbench disk into the internal drive and run the batch using the AmigaDOS Execute command. Thanks to I Morse for sending in the tip.

```
Echo "*ec"
Echo "Bootdisk Creator V1.3*n"

; Format Disk

SYS:SYSTEM/Format DRIVE DF1:
    NAME "WB" NOICONS

; Check for C,L,S,LIBS
    and DEVS directories

IF NOT EXISTS DF1:C
    Echo "Creating C directory"
    MakeDIR DF1:C
EndIF
IF NOT EXISTS DF1:S
    Echo "Creating S directory"
    MakeDIR DF1:S
EndIF
IF NOT EXISTS DF1:LIBS
    Echo "Creating LIBS directory"
    MakeDIR DF1:LIBS
EndIF
IF NOT EXISTS DF1:DEVS
    Echo "Creating DEVS directory"
    MakeDIR DF1:DEVS
EndIF
IF NOT EXISTS DF1:L
    Echo "Creating L directory"
    MakeDIR DF1:L
EndIF

; Copy files across

Echo "Copying command files to C"
Copy C:CDIECHOILOADWBIENDCLI DF1:C
Copy C:COPYIMAKEDIRIDELETE DF1:C

Echo "Copying Icon-Library to
    LIBS directory"
Copy LIBS:ICON.LIBRARY DF1:LIBS

Echo "Copying System-configuration
    to DEVS directory"
Copy DEVS:SYSTEM-CONFIGURATION DF1:DEVS

Echo "Copying Ram-Handler
    and Disk Validator to L directory"
Copy L:RAM-HANDLER!DISK-VALIDATOR DF1:L

Echo "Installing Disk"
Install DF1:

Echo "Job done."
```

A500 UPGRADE OFFER

Many of you who registered with Commodore when you first bought your Amiga 500 or 1000 may have received some mail from Commodore during the past week or so.

After years of screaming from Amiga owners, it seems that Commodore has finally started offering existing users the chance to upgrade their A500s and A1000s to spanking new Amiga 2000s.

Under the offer, all A500 and A1000 Amiga owners who have registered their machines with Commodore are being offered the chance to trade their machines in for machines that bear the label Amiga 2000/U.

Indeed, the 2000/U offer consists of an Amiga 2000 base unit and keyboard, complete with an A2091/2094 40Mb SCSI hard drive and controller for the very reasonable price of £1,099. The retail price of this little lot clocks in at around £2,299, thereby saving you the somewhat hefty sum of £1,200.

That's the good news. The bad news is that you've got to act quickly – the offer expires at the end of April.

If you are registered with Commodore, but have yet to recieve the appropriate documentation, contact the good people at Commodore on 0628 770088 for more details.

Now then, I wonder what on earth Commodore plans to do with all those second-hand A500s and A1000s that will, with little doubt, come flooding in?

Jason Holborn

MORE NEW BOOKS

Those chaps at Adamsoft certainly are good to me. After the arrival of two new titles from Abacus last week, this week I've been sent three new books. All three titles are available from Adamsoft who can be contacted on 0706 524304.

• *Mapping the Amiga* – Operating system programmers will be over the moon with the latest Compute! title. The book provides an in-depth listing of the Amiga's ROM routines, in an easy to find reference format which lists the syntax given in C, machine language and Modula-2.

Not only that, but the book also documents all the Amiga hardware registers and an element-by-element breakdown of each Amiga system structure.

• *Amiga Desktop Video* – Videophiles are certainly starting to be spoilt for choice with the release of this tome on the entry into the Amiga desktop video market, again from Compute!. The book, which was written by Steven Anzovin (who also wrote the incredibly popular titles *Speeches of the American Presidents* and *It Hurts: A Parent's Guide to Children's Needs*), is fascinating from cover to cover.

Subjects covered include the use of colour, creating animation, combining audio and video, composing Amiga music and creating 3D graphics. For the techies among you who enjoy torturing yourselves with such things, the book provides an in-depth look at the technical side of video production including a breakdown of video signals. The only disadvantage of this technical section is that it is geared towards the American NTSC video standard – which isn't really a great deal of use to us PAL people.

• *AmigaDOS Reference Guide* – Another Compute! book this. However, unlike the rest, this latest title is a revised version of an existing title. The book has been updated to cover release 1.3 of the Amiga operating system (took their time, didn't they).

The two authors take the reader step by step through the intricacies of AmigaDOS, from creating a CLI disk to building a personalised command sequence file (batch file to you). Thoroughly illustrated with practical examples, the book covers every AmigaDOS command, detailing its purpose, format and parameters.

AMIGA GAME of the WEEK

TOWER OF BABEL

Microprose • £24.99

BABEL /'beib(e)l n. Confused noise especially of voices; scene of confusion. [Heb. = Babylon (Gen. 11) – *Oxford Dictionary*

Well that's the academics over, but what has it got to do with a video game? All will be revealed...

The definition of Babel harks back to the Old Testament, (Genesis 11 to be precise) and the story of the Shinarian's attempt to reach a tower to see God. What they didn't mention is the Zantorian robots that wanted to use the tower for their own purposes – to return to the ship that could take them home.

The human builders didn't take kindly to the strange invaders, and thus started a huge battle. The better-armed Zantorians destroyed the humans, but not until after they had installed devious war machines around the various sections of the tower. These machines were designed to block, deflect and destroy the robots in their attempts to re-build the tower after the Almighty sent it crashing into ruins.

You take on the role of the collective Zantor 'mind', coordinating the three drones to solve the puzzles set by the humans. Each section is split into a 3x3 grid of towers, seven of which must be solved before the level is complete.

Each tower has a task to be completed, involving either destroying human machines or collecting Klondikes (the tower building blocks). The drones are designed to carry out specific tasks (Grabber can collect Klondikes, Zapper can destroy things and Pusher can shift things around) and must be made to work together in order to succeed. All three can be pre-programmed with eight moves – useful if there is a time limit.

If this all sounds rather confusing, don't worry – it is at first! However it isn't long before you start learning what to look for and from that point you're hooked.

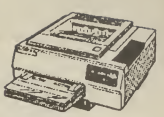
Each puzzle is completely individual, requiring you to stretch your brain in the most extraordinary directions.

The manual, too, is extremely helpful, taking you through the game one step at a time until you find your feet. Indeed, it will still take quite a while before you complete the levels included in the game, but even if you do there is a tower designer included so that you can design new (and perhaps even more tortuous) puzzles.

If you enjoy puzzle games, you probably think that you've seen all the possible formats already, but *Tower of Babel* comes like a breath of fresh air to logic-freaks (like myself). Do yourself a favour – go on out and pick up a copy as soon as possible.

Maff Evans

ULTIMATE BUSINESS MACHINES



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SPECTRUM

FOR YOUR MASTERPIECE

Last week I thrilled you with a review of an excellent Speccy utility called *Flexipage*. The company behind and, no doubt, in front of the package, Flexibase Software, has also got another product that sounds interesting.

Compositor is a picture editor for 128K machines, but as I've only got a battered rubber key Speccy, a coffee scarred Plus 3 and a still fairly gleaming Coupé, I unfortunately haven't been able to load it.

However, it sounds pretty nifty and according to the bumpf allows you to draw complicated pictures on your Spectrum and print them out ready to auction for several million pounds.

Compositor gives you three separate screens to change between as well as 10 character sets, double height, outline, scroll and roll options.

On the actual drawing side of things features include 'elastic line', fill/unfill, magnify and circle commands among a lot of others.

The asking price is £8 for tape copies and £10 for disk (Discovery, Disciple and Plus D) *Compositors*. You'll probably want more comprehensive details and a few sample screen dumps first though, so send an SAE to Flexibase Software, 20 The Parklands, Droitwich, Worcs WR9 7DG.

REMATCH

One of the best footy games for any computer has just been re-released on Ocean's Hitsquad label at the ridiculously cheap price of £2.99. In *Matchday* there's no complicated energy metres or sliding tackles or anything, just a totally compulsive and fairly realistic game of soccer on your Spectrum.

Forget Gazza's, Bazza's, Kazza's or whoever's soccer game, *Matchday* is an essential purchase.

Robin Alway

POKING YOUR ITALIAN STUNT CAR

Possibly the only person in the whole of Faversham, Kent called Miktor is still filling up the entire surface area of my Welcome doormat with zillions of pokes for seemingly infinite numbers of Speccy games.

To get the following two of his hacks for *Italian Stunt Car* and *Wizard Willy* working, simply type them in, SAVE for future use if you want, type RUN and play the game tape from the beginning.

Assuming nothing untoward has happened you'll get a never ending supply of lives and absolutely no excuse for not finishing either game.

Italian Stunt Car

```
10 CLEAR 24299: LOAD "" CODE 24300: POKE 24342,210: RANDOMIZE USR
    24300: POKE 29340.0: RANDOMIZE USR 24384
```

Wizard Willy

```
10 REM WIZARD WILLY - LIVES
20 CLEAR 25000: LOAD "" CODE
25 POKE 26536,144: POKE 26537,91
30 FOR N=23440 TO 1E9: READ A: IF A=999 THEN GO TO 50
40 POKE N,A: NEXT N
50 RANDOMIZE USR 26500
60 DATA 175,50,38,139,195,131,146,99
```

SAM COUPE

RAGS, RAGS, RAGS

Coupé-related contributions are welcomed by me with hearty cheers and free drinks. There will be some sort of reward. The usual address applies.

THE COUPE SCENE

In display of Coupé-owning generosity, Guy Bransby of London has been doing some unpaid research that will surely benefit the entire SAM Coupé-using population of the world. He's recently phoned up a few software houses to find what their plans for the SAM are. Here are the encouraging results:

- Anco told Guy that it intends to convert *Kick Off* as soon as possible.
- MicroProse said it 'would wait for SAM's sales figures.'
- PCG 'deserves a medal for PR' as, according to Guy, it is updating its excellent three-piece-suite of desk top publishing programs, and apparently 'for a fee of around £10 will exchange the Spectrum version for the SAM's.' The update price will be decided a bit nearer to release date though.

"How's that for service?" asks Guy. Very good in my opinion.

Finally, Guy gives the following moral injection: "As to SAM's sales figures, the shop where I bought mine in West London informs me that it has sold as many SAMs as Amigas over recent weeks, so there is a rapidly growing user base out there." Thanks for the confidence boost Guy!

I must admit I did have a few lagging fears that the Coupé might be ignored by software houses and left sadly alone on the shop shelves, but initial reports suggest a bright future for the new computer in our lives.

Robin Alway

PCW

TOUGH GAME

What is an adventure game, asks Mrs M Hill of Beverley. Well, it's a role-playing game, often set in a middle-ages-style scenario, in which you type your actions and the PCW tells you what happens to you. For example, if your Saturday shopping was turned into an adventure game, it might start like this – your actions appear after the # sign:

You are in a car trying to find a park.
#drive north
You can't see a parking space here.
#north-west
There is a small parking space, maybe just big enough for you, by an M registration 2CV with 'Nuclear Power, No Thanks' in the window.
#drive into space
You hear a scraping noise as you back in, followed by a tinkle. A man comes out of the nearby shop and shouts at you: 'Oy, that's my car!'
#shout abuse to man
I don't understand the word 'abuse'
#shout naff off to man
The man turns round and
scuttles off, muttering.
#wait
Time passes...
#wait
The man returns with a large cricket bat and smashes your windscreen.

The games often feature graphics in addition to the text and have puzzles for you to solve. My current favourite adventure is *Fish* (£24.99 from Rainbird on 0666 504326), which has great graphics and a wacky storyline.

Two new games for PCW adventurers are *Goblin Towers* and *Forestland*, both from Classic Quests. The first is aimed at beginners and is a simple hunt-the-treasure scenario, while the second is a more involved but definitely straight-faced adventure, lacking the humour of most games (which some people admittedly do find irritating).

I found them inconsistently mapped and rather plodding, but my tastes may not be like yours. Each is text-only and costs £14.95. Details on 01-861 1166.

QUICK QUERIES

Three questions from last week.

Q: Is there a program that lets you write, edit and print musical notation, as *LocoScript* does with words?
A: Yes, and it's excellent. It's called *The Composer's Pen*: £85.96 from Composit Software on 0952 595436.

Q: Ditto for the Japanese language?
A: No. Pee shee dabburyuu no tame no Nihongo waadopurosesah ga nai soh desu.

Q: With 1992 in mind, can I buy foreign language spell checkers for *LocoScript*?
A: Yes, in every European language except ones like Basque and Welsh. Locomotive is on 0306 740606.

INSTANT TIP

To cause a file to be catalogued by *LocoScript* before any others on the disk manager, begin its name with an apostrophe – eg name your chapters CHAPTER.1, but your introduction 'INTRO. *LocoScript* will then list 'INTRO at the top instead of after the CHAPTER files.

Rob Ainsley

MSX

POWER GRAPHICS

I'm having to start this week's column with an 'oops', and it's not my fault folks. In issue 72 of *Express*, I gave you my impressions of a manual called *Power Graphics for the MSX*.

Unfortunately, somehow between leaving my wordprocessor and arriving on the news stand, the passage that you read as, 'not of use to serious programmers', should have read, and was written as, 'only of use to serious programers.' In other words, if your a complete novice regarding programming, this manual is not for you.

Therefore, it's a slapped wrist for the chap who edited this item, and an apology in the event of any confusion.

While I am on the subject of the manual *Power Graphics*, from AFW Software, the producer has been in touch, and has explained why this 'booklet' as I called it, or 'manual' as the company named it, is presented in such a fashion, and why it is priced at £7.20 for *Express* readers.

The high price is because the company envisages selling only a limited number of copies, due to the relatively small user base. The manual is bound loosely, so that the purchaser could add it to a folder, and AFW claims that you are really getting 42 pages, and not the 21 pages that I stated.

I still think though that printing two pages on one side of an A4 sheet is cheating, one leaf to me is one page. One thing AFW did agree with me on, was that the manual was not aimed at the novice, and is aimed at the serious user. Also the company states, that if you need to know more about the VDP used in MSX computers, you need would be advised to purchase the 120-page *VDP Discovered*, an advanced reference manual, £10 + £1 p&p.

If anyone is interested in these items, AFW Software is at 24 Blenheim Place, Larbert, Stirlingshire.

NEWS FROM AFAR

I have a letter from abroad now, all the way from sunny Malta, and it is a request from a gentleman called John De Martino for help in obtaining a disk drive for his Spectravideo SV1. What he would like is the SV1 707 drive, even second-hand, so if you can help, write to him at KHAMSIN, N/5 off St Maraeret Street, Moste, Malta. I'm sure he would be pleased to hear from you.

WHERE TO GET IT

Aha, at last news of more shops that stock MSX software, this information coming from a proud MSX owner named Darren Holt. He lives near Halifax, and tells me that at the moment, a retailer called the Computer Store, which has shops in Halifax, Huddersfield, and Leeds does stock a few MSX titles.

Only hard sales of MSX software will keep the format alive. Darren obviously tries his best to support MSX, as he has over 160 MSX games, good on yer Darren. A pity more MSXers won't part with some cash and buy the occasional game. It's no good complaining that companies no longer support MSX, if you won't support them and buy products for your machine.

Keith Neal

CPC

DESIGNER LABEL

Fed up with scruffy looking labels on your disks? Then it may be well worth looking at Goldmark Systems label designer program, *Labelmaker*. The program lets you design labels in 10 different fonts, and it has been configured to work with a variety of printers. You can also import pictures from art packages.

The package allows you to design labels for standard 3-inch disks, but owners of 3.5-inch second drives will find that it can also produce disk labels for that size, too. Goldmark will also supply blank coloured labels.

Personally I thought the program was a tad too fiddly to use, and I found it was much less effort to use a pencil. But if you're meticulous about having neatly printed disk labels then why not give Goldmark a call on 0707 271529.

PUFFY GAME

From across the channel – France to be exact – comes a Ubisoft import that will delight fans of maze games like *Gauntlet*. The game goes under the unlikely title of *Puffy's Saga*.

It features two tennis ball like characters, Puffy and his true-love Pufyn, who have wound up stuck in an alien-infested maze. Their objective is, of course, to escape. They must work their way through a multitude of mazes in order to win that freedom.

The game breathes a breath of fresh air into an old genre, and brings it well up to date in the 'cutie' category. You can take control of either Puffy or Pufyn, the former being the stronger and the latter the faster.

It's cute to the core – from the cartoon graphics to the digitised squeaks. Sadly, the one aspect of *Gauntlet* the game does not 'borrow' is a simultaneous two-player option. A great pity, as that was the best part of the original.

EXPLORING MADE EASY

Rock hard *Rick Dangerous* fanatics who found the game too tough will be glad to hear that a new easier version is being released. The new game will allow you to start at any of the four levels.

Currently you must play through every single level every time you play – a situation that lesser players find too difficult. MicroProse PR person Martin Moth describes the new game as: '*Rick Dangerous* for Wimps.' You said it Martin. MicroProse will exchange earlier copies of the game for a small fee.

On the same note, a sequel to the game which features further adventures of the intrepid explorer is in development at this very moment. This time Rick's in space, and has to save the Earth from an impending alien attack.

BIG PLATFORM

How could Rainbow Arts follow the delightfully destructive chaos, known as *X-Out*: with *Turrican*, a game set to do for platform games what it's predecessor did for shoot-'em-ups.

At first glance the game looks like nothing more than a long line of run-about-a-bit-and-blow-'em-limb-from-limb games. It has one big difference, though – it's huge.

Young Turri gets to collect special weapons and things, but the real treat is just the scale of the operation. The roaming adventurer has a vast area to explore on each and every level.

Some are above ground, others form a neo-industrial future world. Best by far though is a gloriously slimy section based on that most imitated of designers H R Geiger – you know, the man behind *Alien*. Crystalline structures surround the poor little tyke and he has to be eternally on his guard for bacteria, which once shot multiply rapidly.

With such massive levels *Turrican* is a real test of memory and reactions as you try to remember where it was safe to jump, and what was safe to shoot. I've only seen it demo form, but it should be hitting the shops soon.

SPACE HARRIER POKE

That all-time classic *Space Harrier* has been doing the budget rounds recently. It is, if anything, a tad hard though. So for all you budding shoot-out specialists who want a bit of help, here's a poke for the budget version. It gives you the power to rapid fire – a necessity I think you'll agree.

```
{GsAq} 1 'Space Harrier
{BnAp} 2 'Encore tape
{GsAo} 3 'rapid fire.
{FvAj} 6 '
{MrAs} 10 DATA c2,20,04,3e,03,cd
{GlAt} 20 DATA 75,06,cb,67,28,0b
{DqAt} 30 DATA 3a,0d,06,fe,39,28
{MnAt} 40 DATA 04,3c,32,0d,06,c9
{AiAs} 50 DATA 21,35,0d,36,c3,23
{OlAs} 60 DATA 36,00,23,36,01,af
{EsAv} 70 DATA 32,95,12,c3,b6,03
{IrAs} 80 y=0:OPENOUT "W"
{GxAo} 90 MEMORY &3B0
{JxAq} 100 FOR x=&100 TO &129
{GvAu} 110 READ a$:a=VAL("&"+a$)
{DkAu} 120 POKE x,a:y=y+a:NEXT
{PwAt} 130 IF y<>&BE1 THEN 170
{FjAr} 140 MODE 0:LOAD "!screen"
{MsAs} 150 LOAD "!block",&3B6
{JrAo} 160 CALL &118
{LnAr} 170 PRINT"data error! 1
```

BEST SHOT

Remember last year there was all that excitement over Virgin's Magnum Lightgun? Well far from being a fad, it seems that lightgun games are really taking off. In France last Christmas there were no less than three guns doing the rounds, the Magnum, the Gunstick and the West Phaser from Loriciel.

The West Phaser is a neat piece of kit. It feels solid and looks like a real western revolver – not a prop from *Blake's 7*. There are no plans to release the gun in the UK, despite the fact that the gun – with different connectors – works on most formats.

Adam Waring and Trenton Webb

• The West Phaser: A light gun with a wild west feel.

BBC

AND ADDITIONALLY

Peripherals are the life-blood of every computer, and without them even the most up-to-date machine is just a pile of junk. The BBC, of course, has always been well served in this respect.

Point Technologies has released a software product that allows your BBC computer to act as a kind of staging post between a Macintosh computer and a standard FX80-compatible Epson printer. Retailing at £29.95 – which is cheap in Mac terms, but expensive for the lesser cousins of the BBC community – the program works by converting printer control sequences for an Imagewriter LQ into standard FX80 ones.

Both computers are connected via their serial ports, and the printer runs off the BBC's parallel port as normal. The magic comes in the algorithm used for processing the bit-map data from the 24-pin Imagewriter.

This magic, author Stuart Cheshire claims, gives unrivaled quality from a mere 9-pin dot-matrix printer. Judging by the sample print-out, he's right.

The graphics are crisp, and text is rendered well down to about 7 points (approximately 1/10 of an inch high). The drawback is, of course, that you must have a Macintosh, a BBC, and an FX80, but if you have, then there is no cheaper way of getting quality results.

HIGHER AND HIGHER

I've just received the latest press release from those nice people at Hi-Tec modems, and as usual, I'm suffering from a headache. When will this company learn that endless lists of specifications do not inform, but actually confuse?

However, after some head-scratching, I think I've come up with some interesting facts. First, the EC2400. This is approved for connection to the BT network, offers full compatibility with the industry standard, runs at about 240 characters per second without data compression, and is on offer at £333.50.

Second, the EC2400 Plus. This is not approved for connection to the BT network, but is identical to the EC2400, except for offering front panel switches as well as LEDs. Current special offer price is £299.

Then there is the HT9600 quin speed modem offering speeds up to 9,600 baud, plus many other wonderful features including the V42bis data compression standard. This gives a potential speed increase of about three to one, although actual rates can vary widely. If you're still confused, here's an example: A 1Mb binary image (machine code) file would take from 2 to 3 hours to transmit using the EC2400 range, but only between 10 and 15 minutes when using the HT9600 and full data compression.

The HT9600 will cost £699 when it becomes available.

COMMS STARTUP

You're starting up with comms: here are four ways to keep down your phone bill.

1. Always use off-peak times.
2. Automate your dialling/log-on procedure.
3. Prepare any text for uploading in advance.
4. Always log off again immediately.

Andrew Brown

YOUR FORMAT

PC 10
ST 12
Amiga 14
Spectrum 16
SAM Coupé 16
PCW 16
MSX 16
CPC 17
BBC 17
QL 18
Atari XE 18
Archimedes 18
C64 18

C64

FORE!

Golf fans are in for a treat shortly, and it might help if you like baseball and driving (vehicles, not golf, this time) as well. The reason for this is that Accolade is about to release its very first compilation of all-time favourites.

On this compilation you will find *Test Drive*, for all you driving freaks out there, *Hardball*, which is the baseball game, and then comes the golf. There are three programs in all, called *Mean 18* and *Famous Courses Vols 1 & 2*. The latter two will probably be of most interest to golf fanatics who are unable to afford the prices to get to and play on courses like Pebble and Turnberry.

Now you can play them from the luxury of your own 19th hole! It's good to see software companies still actively supporting the 64, so why don't you support them and help to keep this supply of software at a high level.

FREE

Free advice for adventure players, that is. One of the things about *Guild of Thieves* that almost had me giving up in despair is that wretched rainbow maze. You know the one – all the different coloured squares next to each other, and to step on the wrong one is to meet certain death.

If you've thrown your copy away because of the aggro, get it out again. The route from the black square is SE, N, E, E, SE, S, SW, E. To get back from the white square go NW, N, NW, E, SW, SW, NW, N.

Two hints for arcade game players, anyway. The first one will give you the usual collection of infinite lives, this time for the game known as *Hawkeye*. After loading it up type in the curious word `VALSSPELER` (not a letter more, nor a letter less), and infinite lives will be yours. The word is probably Swedish for cheat, or something.

Secondly, in the absurdly-named *Ninja Scooter Simulator*, reset the game and enter:

```
POKE 31250,173:SYS 29696
```

to give you infinite time in which to finish things off.

JUAN CORNETTO

Juan Cornetto (just to prove that I'll do anything for a headline) would be a wonderful character in a game. He is not, I am reliably informed, in any of the following. *Batman: The Movie, Graham Gooch's All Star Cricket, New Zealand Story, Robocop* and *Heavy Metal*.

What else do these programs have in common? They are all available on tape for £6.45 from Xenon Technology, that's what. For a full catalogue from this mail order only company send an SAE to 71 Wadham Road, North End, Portsmouth, Hampshire PO2 9ED.

ZERO

I have to point out (again) that Official Secrets has had a change of policy and is supplying no programs on tape. Disk only these days.

Pete Gerrard

QL

AMIGA QL EMULATOR

I've been told that some improvements have been made to Rainer Kowallik's QL emulator for the Amiga. The most welcome change is to the disk read and write routines – they are now much faster. More information when I get it.

QLAF

I've just received issue 9 of CGH Services' *QL Adventurers' Forum*. This is the last issue of *QLAF*, but fear not, *QLAF* has been transmogrified into *QL Leisure Review*.

Subscribers seem less interested in the classic type of adventure, and the new publication will cover a wider range of arcade-type games and other computerised leisure activities.

As with previous issues, it contains an interesting mix of articles. Among the many topics covered are reviews of Di-Ren's *Fleet Tactical Command*, Jochen Merz's *Brian Smasher/Teaser* (it seems to have two names, depending on where it was advertised) and the Watsons' new adventure, *Uncle Loonie's Legacy*.

Fleet Tactical Command is probably unique, in that it can be played as a multi-user game via the QL networking system. It can also be played on a single machine.

CGH's public domain software library includes several programs from French users group QL Contact France (they've been translated into English): *Dominos, Darts, Othello* and *Solitaire*.

Subscriptions to *QL Leisure Review* (four issues) cost £6. CGH Services is at Cwm Gwen Hall, Pencader, Dyfed, Cymru SA39 9HA. Tel: Pencader 574.

MICRODRIVE TIPS

It's a good idea to use Microdrive cartridges in the drive in which they were formatted. Microdrives are comparatively crude devices, and it is quite likely that the characteristics of the two drives in a given machine differ considerably – try formatting the same cartridge in each drive and compare the number of usable sectors. If you use a cartridge in a different drive, re-format it first.

If you have problems reading a cartridge copied on another machine, try pressing down on one of the two accessible corners of the cartridge.

This dodge used to work with tape cassettes – it corrects for differences in the read/write head azimuth setting – and I've heard that it sometimes works with Microdrive cartridges.

QUANTA WORKSHOP

As I write this, QUANTA has just held a successful weekend workshop at the Kingsthorpe Community Centre, Northampton. The place was bursting at the seams, as usual, with hordes of enthusiastic QL users.

The group's AGM took place on the Sunday, resulting in a few changes to the committee. David Johnson is the new membership secretary. Phone him on 0789 8425423.

John Torofex

XE

LET'S GET SERIOUS

Many owners of 8-bit computers are constantly moaning about the lack of serious home productivity and business software available for their machines.

Indeed, if you go to the big software cupboard, the Atari 8-bit market seems to be slightly bare. However the XL and XE – being of American origin – enjoyed a large range of serious software during the early and mid 1980s, and although you might have to dig around, much of this is still available.

Probably the most frequent serious use of the home computer is for word processing and this particular task is no stranger to the early Atari machines. *AtariWriter* is one of the best word processors I've used on any machine and is all that you could want in a word processor. The program costs around £30 (source at the bottom of the column).

Another use propounded for the home computer was its role in controlling the home finances. And in this money-concious day and age, that role has never been more important.

Atari Finances from Atari Software enables you to plan budgets, evaluate the results of spending sprees, establish spending goals and perfom projections of cash movements. The program provides over 125 item entries over 13 separate categories in any one of five income brackets.

Atari Finances comes on two disks and costs £19.95. Both *AtariWriter Plus* and *Atari Finances* can be had from the Silica Shop on 01-309 1111.

Edmund Blake

ARCHIMEDES

MAGIC OF THE EUCORN

The story so far... Last week selfless columnist Bertrum Carrot sacrificed a blank formatted disk to the vagaries of the Royal Mail and author of a free music program. The advert promised something new in Archimedes music for the price of a donation to a well-known charity. Well, the disk was returned a couple of days after posting with a printed label, a stamped, addressed postcard and a copy of *Eucorn* coded in its iron particles.

Eucorn is a music program with a series of differences. At its simplest level it can be thought of as a controllable musical box, at its most complex as a computerised conductor. It enables you to play a musical score and alter the tempo, voice and many other performance parameters while the music is playing. One of the ideas behind the package is to allow those without the necessary musical skill to express their musicality by applying variation and even feeling to 'pre-recorded' music.

The program starts by loading a series of instrument voices, which can be assigned to any channel before or while you're playing a piece. They are harmonically analysed voices, created from a sounds generated with EMR's *SoundSynth* package, so should at least be pleasant to listen to. In practice, I had trouble distinguishing between them. The software is very detailed, though, so perhaps I've missed some set-up parameter.

The main performance menu shows a schematic score, using dots for notes in an unconventional notation. It pages through as the music plays, with status information at the top of the screen displaying the system parameters set-up.

This is not a review in the true sense, as *Eucorn* is emphatically not a commercial program. Details of the code are included on the disk as is the source of the BASIC it's written in. The author, Ronald Alpiar, is keen for feedback and to have the program taken up and expanded by other PD authors. The motives are commendably altruistic and the program has obviously been a labour of love. It's well worth getting hold of a copy, working on it and expanding its workings. There are a lot of new and valuable ideas in the program, well explained in the copious documentation. Why not write to the author at 84 Dudsbury Road, Ferndown, Wimborne, Dorset BH22 8RG, enclosing a formatted disk and an SAE?

E TYPE TAILS

I've been playing 4th Dimension's *E-Type* for some while now and believe it to be the best thing that that company's released to date, and one of the best games on the Arc. Did you know that pressing [Ctrl][Q] causes both wheels and the bumper to fall off your car and driver and passenger to fall through the floorpan?

E-Type, like several other programs, doesn't understand if you have a memory-greedy screen mode running or a lot of RAM allocated to sprites – it just refuses to run. Why can't programmers read the current status of the machine, alter it as needed and return parameters to their previous settings on exit?

It is more than clear to me that we shouldn't have to get into `*CONFIGURE` commands to run a game.

Bertrum Carrot

THE KEY TO IMPRESSION

I've had a replacement key for *Impression* and a letter from Computer Concept's owner, Charles Moir.

In the letter, Moir claims a very low return rate on security keys, something less than one per cent, but acknowledges that the one supplied to me was faulty.

He was also kind enough to include a 'dongle dangler', which allows the key to be hung off the back of the Arc, causing somewhat less physical stress to the vulnerable printer socket.

All that remains is to test the dongle to see if *Impression* can produce satisfactory output through it. I'm currently 'between' laser printers at the moment as I sold my old LaserJet II in favour of its replacement, the LaserJet III.

I can't therefore test the key until the new machine arrives. With a little bit of luck, we'll have a thorough test next week.

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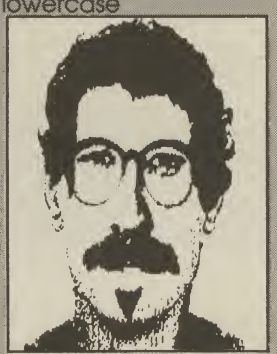

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THE SHOPPING EXPRESS GUIDE TO SOUND

SAMPLERS, SEQUENCERS AND INTERFACES

Computers can be of great help to musicians. As well as making noises from their own loudspeakers, musicians can sample sounds and replay them, or control a synthesiser via a MIDI connection.

The borders between music and software are becoming more blurred with each passing year, as music companies invest in both hard and software companies. The industries are working hand-in-hand to produce an ever wider range of products. Indeed, the choice is baffling and growing larger month by month To some extent, of course, the choice of software and its possibilities are marked out by the computer that you choose to run it on. Now *Express* gives you a comparison of the major computers, followed by a comprehensive run down of the best software available across the board.

COMPUTERS

● ATARI ST SERIES

▲ Built-in MIDI ports
▲ No compatibility problems
▲ Large software base
▲ Not expensive

▼ Some programs require hi-res screen
▼ GEM environment can be slow
▼ Internal sound chip not very good

● COMMODORE AMIGA SERIES

▲ No MIDI compatibility problems
▲ Excellent internal sound chip
▲ Stereo output
▲ Multi tasking

▼ MIDI interface not included
▼ Software base not so large yet

● PC

▲ Large software base

▼ MIDI compatibility problems
▼ Poor internal sound chip
▼ interfaces relatively expensive

● ARCHIMEDES

▲ Excellent internal sound chip
▲ Very fast processor
▲ Multi-tasking
▲ New models have built-in MIDI interface

▼ Small software base

SEQUENCERS

Perhaps the most widely available type of software. MIDI sequencers come in all shapes and sizes from the public domain to the bespoke facilities. The usual mark of excellence is ease of use coupled with hosts of labour-saving musically intelligent routines. Hopefully it will also be able to save in MIDI file format so that work on one sequencer can be transferred to another without tears.

● CREATOR

FOR Atari ST series
FROM C-Lab (Sound Technology): 0462 480000
PRICE £285

Becoming the most used of sequencers it has excellent editing and arranging features. Although not cheap, if you are serious about music then this is the one to go for. Hardware expansion to control up to 64 instruments independently

▲ Excellent facilities
▲ MIDI file compatibility
▲ Will also adapt to video sync
▲ Good editing

▼ Handbook can be difficult
▼ Expensive if you are not serious

● TRACK 24

FOR Atari ST series and Amiga
FROM Comus/Soundbits: 021 733 2063
PRICE £75

Well priced budget sequencer with more features than you would expect, rivaling software twice it's price. Compatible with more up-market sequencers and scoring packages.

▲ Cheap
▲ Good sequencing facilities including Mixdown
▲ MIDI File

▼ Editing is peculiar

● STEINBERG PRO 24

FOR Atari ST series and Amiga
FROM Evenlode: 099 389 8484
PRICE £285

The Steinberg Pro 24 has been the industry standard for many years. The soon-to-be-available Amiga version should prove interesting, if all the rumours are true. They are pushing their new program 'Cubase' at present but one should not neglect this easy to use and very popular program. Make sure you get at least version 3 though.

▲ Easy to use
▲ Established program
▲ Easy editing

▼ Price

● VIRTUOSO

FOR Atari ST series
FROM The Digital Muse: Audio Software: 01 586 3445
PRICE £225

A new all British program having it's first outing this year. Initial reactions are very good and the program has, indeed, many things in its favour. It has all the features that are available on much more expensive packages and, yet, the Virtuoso still remains quite easy and friendly to use.

▲ Very fast - thanks to re-writing of screen management
▲ Very accurate
▲ Can perform disk operations while still running
▲ Many excellent features

▼ New and therefore untested in the general market
▼ Price

● K.C.S. 1.6

FOR Atari ST Amiga, Mac and PC
FROM Dr T: 01 258 3454
PRICE £199

Dr. T programs, are nearly all made to run in a Multi Program Environment, which means that you can work on several of them simultaneously. KCS runs on 48 tracks, has loads of features and is the most popular sequencer from the range. It can also be upgraded with add-on programs to enhance editing features. What is more the KCS can be enhanced as far as music printing goes as well.

▲ KCS is a very well established program
▲ Upgrades and works with other software
▲ MIDI file

▼ Editing not easy

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Includes: TV modulator, 3.5" Disk Drive with Amiga DOS Kickstart, Workbench and Batman The Movie game, F18 Inceptor, Paint 2, New Zealand Story.

AMIGA ACCESSORIES

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design, logo and BBC emulator.

Amiga A501 RAM pack + Clock.....£89
Amiga joystick.....£10
TV Modulator.....£15
Phillips CM8833 colour monitor (inc. cable) .£219
Phillips BM7502 12" green monitor.....£79
Phillips BM7522 12" amber monitor.....£89
Amiga To Philips cable.....£8

AMIGA DRIVE

1 Meg 3.5" external.....£68
1 Meg 3.5" internal.....£63
1 Meg 5.25" external.....£99

ATARI DRIVES

1 Meg 3.5 external.....£68
1 Meg 5.25 external.....£99
1 Meg 3.5 internal.....£63

ATARI COMPUTERS

520 STE Explorer pack (incl. Hyperpaint, Hyperdraw, Borodino).....£248
520 STE Power Pack.....£315
1040 STE.....£378
1040 STE Power Pack.....£409

SCANNERS

Atari Scanner.....£169
Amiga Scanner.....£169

MOUSE

Naksha mouse.....£39

STAR PRINTERS

Star LC10 mono.....£135
Star LC10 II mono.....£159
Star LC10 colour.....£168
Star 2410.....£225
Star LC15 9 Pin 136 column.....£264
Star LC2415 24 Pin.....£328

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Panasonic 1081.....£125
KXP 1124.....£219
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Citizen 180E.....£127
Swift 24.....£255
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MANNESMAN TALLY

Mannesman MT 81 Dot Matrix.....£115
Mannesman Sheetfeeder.....£62
Mannesman Serial Interface.....£49

REPAIRS FOR AMIGA AND ATARI

● M.R.S.

FOR Atari ST, Amiga,
FROM Dr T: 01 258 3454
PRICE £59

The MRS is a low cost eight track sequencer that provides a decent introduction for the beginner. It has a few quirks in its operation, like defining song length from the length of track one. Generally, however, this has quite generous facilities. Indeed, the Amiga version will support the internal voices.

▲ Easy to use
▲ Low cost
▲ Can be upgraded to KCS
▲ Well documented

▼ Has a very laborious editing facility, that slows it down
▼ Has a few peculiarities

● SUPER CONDUCTOR

FOR Atari ST
FROM Microdeal: 0726 68020

This is a very popular little sequencer that will control the ST sound chip. It has been extremely well thought out, especially in the song arrange section. Can also cope with the fine details of MIDI including systems exclusive editing.

▲ Suitable for beginner
▲ Easy arrange section
▲ Well documented
▲ Controls internal sound chip
▲ Good if you want to control MIDI via data

▼ Editing not too easy
▼ Quantize limited

● WADDINGTON SEQUENCER

FOR Atari ST
FROM Public Domain
PRICE about £2

Canadian 64 track sequencer. Although limited in facilities like quantize and editing it is nevertheless a real bargain.

▲ Costs next to nothing
▲ Excellent introduction to MIDI
▲ Easy to use

▼ Limited facilities
▼ Can crash on occasions

● EZ TRACK PLUS

FOR Atari ST
FROM Syndromic Music: 01 444 9126
PRICE £49.95

This is a reasonable sequencer that is fairly easy to use. It is compatible with other Hybrid Arts programs that also boast a multi program environment. Limited on quantizing but not bad for the money. Editing in data only but good for organising songs.

▲ Good price
▲ Easy to use
▲ Compatible with Hybrid Arts EZ Score

▼ Unfortunately, limited on editing and quantizing

● STUDIO 24 MK 1

FOR Archimedes
FROM EMR: 0702 335747
PRICE £99

The cheapest sensible sequencer for the Archimedes. Cuts a few corners here and there but is not a bad sequencer with average editing facilities.

▲ Best for the Archimedes in this price range
▲ Can be upgraded to more powerful Mk2
▲ Very fast

▼ Poor documentation
▼ Editing of data non-graphic

SYNTHESISER VOICING SOFTWARE

One of the great boons of MIDI, especially with the complex multi-timbral synths/tone modules that are on the market. You are able to see the set-up on-screen instead of labouring over a LCD, which allows you to create sounds easily. Additionally, many programs have automatic voice generation to help with creating new sounds.

● CZ ANDROID

FOR Atari ST
FROM Syndromic Music: 01 444 9126
PRICE: £75

The most useful program to get if you have any of the Casio CZ series synths. On their own they are pigs to program and the preset sounds are rancid; use this and your CZ will never sound the same.

▲ Easy to use
▲ Excellent graphics
▲ Good library facilities

▼ Can't really think of any!

● 3D PROGRAMMER

FOR Atari ST
FROM Soundbits: 021 733 2063

This is a smart piece of software that not only covers the Roland D110 but also covers the keyboard versions D10 and D20.

▲ Easy to use
▲ Configures a very difficult instrument

▼ Roland's version of D110 may not work with it (or any other software for that matter!)

● X-ALYSER

FOR Atari ST
FROM C Lab (Sound Technology): 0462 480000
PRICE £175

Very intelligent voicing program for the DX7 synth. It has a built in conversion to MIDI sample dump in order that the sound might be replayed from the sampler directly.

▲ Very easy to use
▲ Good library facilities

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PC10 (XT) Dual Drive/12" Mono	£657
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PC10 (XT) Dual Drive/14" VGA Colour	£950
PC20 (XT) 20Mb HD/12" Mono	£844
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A500	**CLASS OF THE NINETIES PACK** (includes Amiga 500, Modulator, Midi I/F, Deluxe Paint II, Publishers Choice, Maxiplan 500, Superbase Personal, Midi Software, Logo and BBC Emulator).	£548
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A500	**FLIGHT OF FANTASY** (Includes Amiga A500, F29 Retaliator Mouse, Modulator, Deluxe Paint II, Escape from the Planet of the Robot Monsters and Rainbow Island).	£379

AMAZING AMIGA A2000 OFFER

Between 30th March and 30th April, 1990 we are offering the A2000 (RRP £2299) for £1099.00, a saving of £1200. Simply return your Amiga A500/1000 together with mouse, power supply and payment of £1099 and we will send:-

AMIGA 2000 (main CPU inc 6800 Processor) 1Mb Ram, 40Mb SCSI Hard Disk & Controller 3.5" Floppy Disk Drive, Mouse, Workbench 1.3 1Mb (NEW ANGUS) Video RAM.

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Dual Drive/Colour ECD	£827
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Supplied with Lotus Symphony (worth £550.00 plus VAT)

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Dual Drive/12" VGA Colour Hi-Res	£927
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Citizen 180E 120cps/80col/P	£205
Citizen MSP15E 160cps/136col/P	£256
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Citizen Prodot24 200cps/24pin/S&P	£499
Citizen Swift24 194cps/24pin/80col/P	£347
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Star FR10* 80col/300cps/P	£384
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ATARI

520STFM DISCOVERY PACK (includes Bomb Jack, Carrier Command, Out Run, Space Harrier, STOS, Neo-Chrome, First BASIC, ST Tutorial and Discovery Book)	£270
520STE Computer	£409
1040STE Computer plus Hyper Pack	£477
1040STE Computer plus Midi Men Music	£489
1040STE Computer plus Superpack	£489

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Amstrad 14" Colour VGA Hi-Res (0.28)	£493
NEC Multisync 2A	£485
VGA Card	£194
Philips CM8833 Stereo Monitor	£265

HARD DISK DRIVE

30Mb Hard Card	£236

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A 16Mhz AT COMPATIBLE FOR ONLY
£805
inc VAT

Newton 286 Base Unit 1.44Mb Floppy Drive/16Mhz 80286/512K RAM/6 Expansion Slots	£805
Additional 512K RAM = 1Mb On Board Add	£75
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On-Site Maintenance	£58

AMSTRAD MODEMS

MC2400 2400 Baud Modem Card	£206
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★ ★ ★ READ ALL ABOUT IT! ★ ★ ★

▲ Sample dump
▲ Use of graphics

▼ Price is on the hefty side

● SYNTH LIBRARIES VARIOUS

FOR Amiga, ST
FROM Public Domain
PRICE £2.95 approx.

It is worth noting that there are various public domain programs that will voice the most popular synths; e.g. DX7, CZ series, as a cheap cheerful introduction - they could well be your best bet.

▲ Price
▲ Usually have a set of new voices for your synth
▲ Sometimes have random voice generation

▼ Sometimes fail for no apparent reason
▼ Editing not always available
▼ Editing is nearly always numeric and not easy to understand

SAMPLERS

Samplers is another growth area for computers. In fact, the public domain market is full of samplers of all sorts, from well worn rock numbers to Thunderbirds! However to actually digitise sound you will need hardware and this is where the expense comes in. The main points to remember are that editing needs to be clear and easy, sounds should be able to be filed away to be re-used in other utilities and MIDI support is certainly a must for the serious user.

● FUTURESOUND 500

FOR Amiga
FROM HB Marketing: 0895 444433
PRICE £89.95

Very clean and clear sampling with good editing facilities.

▲ Easy to use
▲ High quality sound

▼ No MIDI
▼ Cost

● A.M.A.S.

FOR Amiga
FROM Microdeal: 0726 68020
PRICE £75

Quality sampling plus MIDI interface.

▲ Clean samples
▲ Comes with MIDI interface
▲ Well organised program

▼ None, unless you think it is too expensive

● PRO SOUND DESIGNER

FOR Amiga
FROM Eidersoft: 0234 273000
PRICE £75

If you get the 'Gold' version, you will get a far superior program. MIDI is included but the interface is extra.

▲ Clean sounding samples
▲ Has many on-screen features

▼ MIDI interface is extra

● I.S. DIGITISER

FOR Atari ST
FROM Innovated Software: 0903 213614
PRICE £69

A sampling package with the options of buying extra software for MIDI and/or clever wave form displays.

▲ Very high sampling rate
▲ Good filters
▲ Program can be expanded

▼ MIDI not in original program
▼ Could be costly

● REPLAY 4

FOR Atari ST
FROM Microdeal: 0726 68020
PRICE £59.95

One of the first sampling packages not in it's fourth version. Earlier versions available on Public Domain as sample players only. MIDI well looked after.

▲ Editing very easy
▲ Samples sound very clean
▲ Tried and tested program

▼ The ST is not the best sample player.

● SAMPLER

FOR Archimedes
FROM EMR: 0702 335747
PRICE £126.50

Has all the funtions for sampling plus the of the computer to make them very clean 8 bit samples.

▲ Fast
▲ Many good features
▲ Very smooth samples

▼ Price

MULTIPLE PURPOSE PROGRAMS

The 'all talking, all singing, and all dancing' section. These are programs that cross over from having just one dedicated function. In the case of Music-X you have a complete music studio under one roof. The rest are mainly for fun (but what's wrong with fun anyway?) although some serious work can be done on them.

● MUSIC-X

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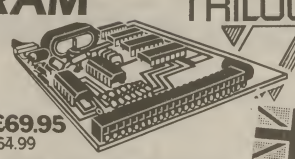

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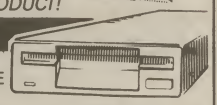

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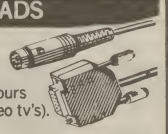

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▲ Comprehensive program
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▼ Uses traditional sequence notation

SYNTHESISERS

As mentioned earlier, at the beginning of this piece, the quality of sound does depend on the computer at your disposal. In truth, only the Archimedes and the Amiga are serious contenders for real sound synthesis at present, although Atari is attempting to fix this with the STE. Future computers will doubtless go even further down the road to having a synthesiser tucked under the housing. As a mark of just how far this is going, PC owners can actually now buy synthesizer cards from the likes of Roland. Indeed, it would not be unwarranted to expect a large growth in this field soon, moving away from just replaying sample files towards a more active music synthesis with your computer, and of course, with your ear.

● SOUND GENERATOR

FOR Atari ST
FROM Public Domain
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FROM HB Marketing: 0895 444433
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▼ Price

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FOR Archimedes
FROM EMR: 0702 335747
PRICE £49,95

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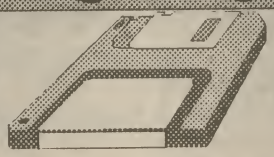

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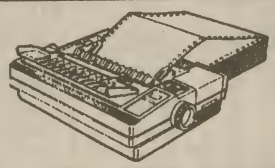

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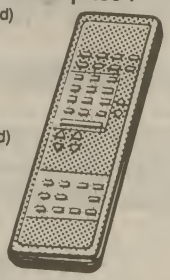

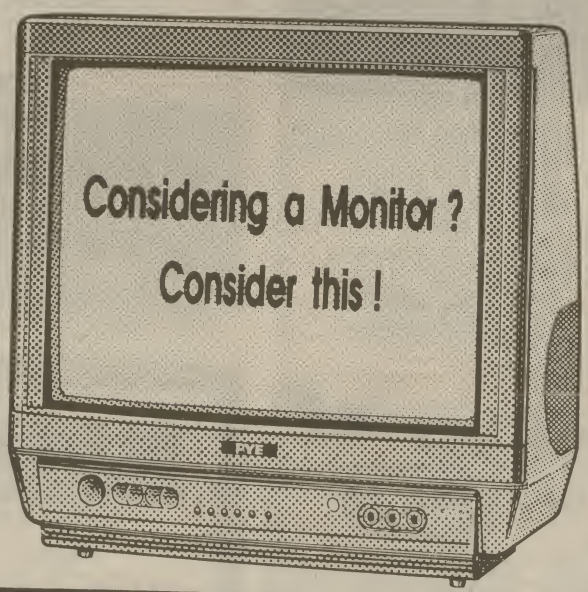

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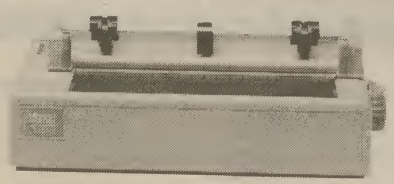

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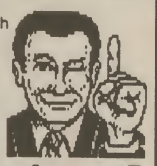

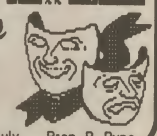

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a word of advice

When sending disks for evaluation remember to label them clearly with both your full name and telephone number, and also the machine format, this prevents your work being ignored.

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Try make programs autoloading or use a slide show for Artwork, this saves time when evaluating your work and puts it in a much more favourable light.

Never just turn up on the door step, it is unlikely that the person that you need to see will be available and it won't put you in a good light.

Try not to ask for your disk back and if you must have it back than be sure to send a prepaid envelope with it. If you want to find out how your work was received then just make a polite call asking if the disk got there okay.

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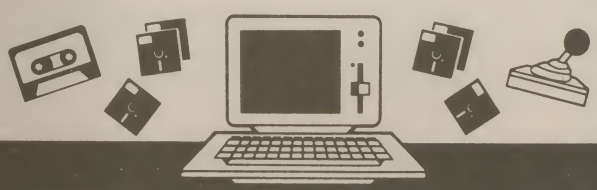

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ANY computer users who use Klaver Music Notation interested in forming/joining a user group; ring Mike on 01 520 5223.

BBC contacts wanted to exchange software, hints, tips etc. All letters replied to, write to K. Scotney, 17 Cromer Avenue, Burley, Lancs BB10 3HA.

BOURNEMOUTH and POOLE Atari User Group. Support for 8 Bit and ST. Monthly meetings. Membership £8.00. Quarterly Newsletter 8i16, £3.80 four issues. Details write to: 248 Wimborne Road, Oakdale, Poole, Dorset.

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DISK magazine for Amiga freaks. Send Submission on disk to: Arthur Wyatt, 68 Shefford Road, Meppershall, Shefford, Beds. Submission disks get returned with magazine on, blanks returned as blanks.

DOES anyone know of an ST user club in the Wirral/Merseyside area that is open to membership? Please ring 051 678 8519.

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FAST Amiga contacts wanted, repeat fast! Send Discs or Letters to: Andy, 35 St Annes Drive, Aylestone, Leicester LE2 8HU.

GWYNEDD, N. WALES. ST User Group. I want to get in touch with all local ST Users to form a new group. Contact S. Rammerling, Clogwyn Plas Gwyn, Pwllheli, Gwynedd, N. Wales, LLS 36UA.

HYPERPAD – interested in forming a user group? SAE to Dave Langstaff, 78 Harrison Road, Swaythling, Southampton, SD2 37J.

IF You want to spread your groups in Asia. Send your latest + your demos to: Tariq, P.O. Box 3581 Safat, 13036, Kuwait. 100% reply, Amiga Only. Also will swap spot.

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LAMER? Want to swap software, tips, demos and form a Lamers against Lamers Society? Then contact, Faisal Patel, 73 Track Road, Batley, W. Yorks, WF17 7AB.

LIST the low income ST User Group for students and the unemployed send two blank disks to Marcus, 9 Days Green, Chapel Street Mary, Ipswich, Suffolk IP9 2HZ for details.

NINTENDO contacts wanted for swaps and setting up of User Group! Write to: Ashley Middleton, Amberley, Park Drive, Little Aston Park, Sutton Coldfield, B74 27A, 100% reply.

PC200 user I think it's OK! Did you buy the other one? What do you think of it? Give me a ring 0432 266451 Neil.

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SOLIHULL, West Midlands Atari ST User Group meet second Tuesday of every month, other machines also accepted especially ARC's and even Amiga's. Phone 0564 770132 after 6.30 ask for Richard.

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ST contacts wanted if into Agtomation or any other, then write or phone 110% reply, almost. Lee Edwards, 24 Topllan Road, Glan Conwy Clwyd, LL28 5NP tel: 0492 580447.

ST users in Bradford, I'm starting a users group, just contact Dave on: 614945 and get the most out of your ST. NO FEES!!

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TO PCW beginners. Locoscript, Newsdesk International. SAE to: John Peters, 299 Southway Drive, Southway, Plymouth, Devon, PLL 6QN. Share a problem, find an answer!

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● HELP WANTED

PCW wanted. Expansion edge connector pinout assignment and/or circuit diagram for RS232C interface addressable by PCW utilities and software. Costs refunded, phone, stamp, etc. Thanks. 01-261 0132.

COULD anyone tell me how to access the missions on ST version of Elite, I would be very grateful for help. J. Williams, 4 Hurstbourne House, Tangley Grove, Roehampton, London, SW15 4EJ.

INFORMATION on how to link Amiga or 64, to a pocket radio modem. Can you help? Send replies to: Andy, 25 Melrose Avenue, Sutton Coldfield, West Midlands, B73 6NT. Hi to Headhunter, Snatch, Turbo Dist, SI'87, Mark I + II, Frame.

HELP: can anyone help me with STBase, all letters replied guaranteed. Write to: A Bass, The Maltings, Haviker Street, Collier St, Nr Tonbridge, Kent, TN12 9RE.

I'VE just purchased a second hand CP80 printer type 1. Can anybody tell me the make of the machine please! And whether there is a Public Domain program for the printer driver. I own an Atari STE 520. Tel: (0532) 786129.

MY ST Xenon/Starquake and organiser disks have been corrupted - can anyone please re-copy them? I'll pay all postal costs. Tel: (0384) 396522 around 6pm.

HELP with Comms software for Spectrum to use with WS200. Write: M Stevens, 6A Lydford Rd, Paddington, W9 3LU.

TUITION wanted in Amiga assembly language, must be in Midlands preferably Rugby/Coventry area. Please contact: Ben 84a Cambridge St, Rugby, Warwks.

WANTED information/software/hardware about Epson PX8 CPM2.2 system disk also required for drive. Any information would be helpful. Tel: Aylesbury (0296) 28645, Martin.

WANTED. Can anyone tell me if its possible to load items saved in MDM. Rez from the Geniscan scanner to low Rez on the Degas Art Program. D Wood, 126 Hervey St, Ipswich, Suffolk IP4 2EU.

MULTIFACE owner needs help with Lifeguard. Dave: (0322) (Dartford) 229822.

HELP Chaos Strikes Back - how do you cast spells? Also appreciate some strong characters from Dungeon Master. Eddie, 62 Broxholme Lane, Wheatley, Doncaster, DN1 2LW.

HELP Someone sent me some disks, including Vision Megademo IV - I've lost your address so please write again. Steve, 14 Braehead Drive, Barnton, Edinburgh EH4 6QL.

HELP is there anyone who can help me find fonts for Signum II (some 800?) contact: Jim, The Caravan, Four Winds, Lower Moor, St Davids, Haverfordwest, Wales, SA62 6PR.

HELP where can I get a +3 midi lead from? Please send advice to: John Birch, 36 Cotswold Drive, Rothwell, Leeds LS26 0QZ, West Yorkshire. Thank you.

MY ST Xenon/Starquake and organiser disks have been corrupted - can anyone please re-copy them? I'll pay all postal costs. Tel: (0384) 396522 around 6pm.

HELP with Comms software for Spectrum to use with WS200. Write: M Stevens, 6A Lydford Rd, Paddington, W9 3LU.

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HELP! Cricket crazy!

Having recently purchased an Atari STE, could you answer a few questions for me?

1. Has *Grand Prix Circuit* been released for the ST? If not, what is the best grand prix simulation?

2. Being a cricket fan, are there any good cricket simulation programs in a *Football Manager* or arcade format, and if there are, where can I get them?

3. Is there any software for calculating cricket averages? If not, would a spreadsheet do?

4. Could you suggest a good, cheap printer to print out cricket averages and basic letters?

Christopher Bird, Aylesbury, Bucks.

1. *Grand Prix Circuit* has not yet been released for the ST. *Turbo Out Run* is probably one of the best driving games.

2. I know of no cricket simulations, although there may be something in the public domain.

3. I don't know of any software package specifically intended to calculate cricketing averages, and a full-blown spreadsheet will cost rather more than calculating a few averages is worth, so perhaps the best course of action is to locate a suitable spreadsheet in the public domain. One such program is *ST-Sheet*, an incredible spreadsheet program written in Fast BASIC and available from the Softville PD Service, Unit 5, Stratfield Park, Elettra Avenue, Waterlooville, Hampshire PO7 7XN. A disk containing the *ST-Sheet* program will cost you a very reasonable £3.

4. There are currently several cheap printers vying for attention in the market place, but perhaps the most popular at the moment is the Star LC-10 mono from Star Micronics and available from – among others – Evesham Micros on 0386 765500. The LC-10 is a 9-pin Epson-compatible printer offering unusually high quality at the price (around £150). The printer provides a near letter quality mode and will be a perfect complement to your STE.

TIP Monitor mayhem!

I may be able to shed some more light on the Electrochrome monitor connections problem discussed by you and several readers. I think there is an error in the name Electrochrome. I think this should be Electrohome who are based in Kitchener, Ontario.

Assuming this is correct, then this firm did at one time produce a range of monitors and I have a 14-inch device which was imported by JVC and sold by Opus Supplies. Unfortunately, both JVC ➤

HELP! The bottom line on going on line

I own a Commodore Amiga A500 and I am thinking of buying a hard disk drive. What is the difference (if any) between buying the Commodore A590 (a 20Mb device) and buying a cheapy drive with twice the capacity for the same price? Are you just paying for Commodore's name? Can you recommend a good cheap drive?

I am also thinking of purchasing a modem for my Amiga. I know nothing about them (technically). Can you recommend some modems for me both expensive and cheap? How much do they cost? And how expensive are they really to run – there are a lot of myths about running modems? And last, what do I need to get it running?

K A Jones, Reading, Berkshire.

There is no difference between a hard drive offered by Commodore and a device from a third-party manufacturer. Traditionally in the computer industry the biggies such as Commodore, Atari, IBM and so on have charged at least double for the same peripherals as smaller third-party dealers. RAM expansions, floppy and hard drives and monitors are all far more expensive. Plump for the the third-party offering every time. I believe that the Vortex 40Mb drive is regarded as being a reliable, well-made device offering quality construction and fast access times. The Vortex costs £499.99 and is available from – among others – Ladbroke Computing International on 0772 203166.

The wonderful world of comms, huh? To the uninitiated, comms can be an arcane world seemingly impossible to penetrate, what with baud rates, Hayes compatibility, automatic and manual, V21, V22 and so on. The first thing to look for in a modem is its range of speeds. Obviously, if you're transmitting data via the public telephone system then the quicker that data is transferred to and from the host computer the shorter the telephone call and the smaller the resultant bill.

At the bottom of the speed range, modems provide 300 baud (or V21 as its written in comms shorthand). This is a popular speed which has been in use for a number of years, and which will enable you to log-on to most bulletin boards, public information services and the like. Next there's 1,200 baud (V22), four times faster (although due to errors and re-transmission of data, this increase in speed can sometimes be a decrease!), 1,200/75 also known as V23 (the split baud rate originally adopted by the big on-line information services such as Prestel in order to minimise transmission errors – the host computer transmitted at 1,200 baud and your machine replied at 75 baud) and finally, becoming increasingly popular due to improvements in telephone technology, 2,400 baud or V22bis.

A modem offering all of the above speeds is the most desirable, but they tend to be expensive (around £300). If you can't afford a quad speed modem, try to get one with at least V21 and V22 (should be priced around (£150). Don't worry about the split baud rate, most of the information services now support V21, V22 and V22bis – V23 is gradually fading into obscurity. You should also choose an automatic modem rather than a manual device. The former performs dialling and log on under software control, the latter uses knobs on the front panel. Software control? You will be able to issue commands such as dial, disconnect and so on to the modem from within a communications software package. Which leads nicely into Hayes compatibility.

The Hayes modem manufacturing company is an American firm whose modem command language has become the industry standard for modem control (in the same way that printer manufacturers attempt to make their printers Epson control code compatible). Most comms packages support the Hayes command set making life on-line very easy for those with Hayes compatible modems. It's possible to get by without Hayes compatibility, but at best you'll have a frustrating time trying to work out correct control code sequences to type into your comms application.

So, what devices are on the market and what do they offer? Unlike much of its equipment, Amstrad's MC2400 quad speed, automatic, Hayes-compatible modem is a sturdy and reliable device with a breath-takingly cheap price (below £200) which should be the first choice for those with a couple of hundred and clams and a yen to get on line. If the Amstrad's a little expensive for you, then have a look at the Pace Nightingale. It is manual, non-Hayes compatible and only offers V21 and V23, but then at this price (under £120) you can't expect much!

Basically, a modem costs nothing – except the price of a telephone call – to run. Unfortunately, BT's quarterly horror story being what it is, getting on-line can cost a fortune for the unwary. If you log on to local bulletin boards situated in your own town or city however, then a local call will cost you a reasonable 55p per hour during off-peak charge bands. Most boards are free, so with the negligible costs in electricity, you'll be paying just over 10 bob an hour – not bad, right? Never log on to BBs, Prestel and so on during the day. The telephone charges are horrendous during peak charge bands.

and Opus Supplies discontinued the import of these monitors some years ago. However, Opus did some time ago send me a data sheet relating to my unit.

The data I have may be of some help in this case, however my machine has two inputs, a 7-pin DIN socket and a 15-pin D-connector. This latter is for a four-colour input and a negative comp. sync. This is non-standard and requires a three-volt peak to peak signal. The 7-pin DIN connector is a form of RGB with the pin connections as follows: 1 red input, 2 green input, 3 blue input, 4 blanking pulse output (which can be ignored on the ST), 5 positive comp sync, 6 16 volts (this can also be ignored) and 7 ground.

There is also a three-volt signal and the input impedance is 1.5KΩ. It is important to ensure that the colour lines are correctly connected and that the sync pulse is positive. Here is where I feel that there may be a problem. The ST has a 1.0-volt output and a negative comp sync! Hope this helps.

John Le Hall, Sidmouth, Devon.

HELP! Damaged RM

Three months ago I bought a damaged Research Machines Nimbus computer, minus disk drive, monitor and keyboard *(great purchase, right? – Uncle TT).* Could you please suggest a source of some cheap replacements? Is it possible to run the machine through a television? If so, how could I connect it up? I am on a low income so anything really expensive is out of the question.

P. Moore, Hull, Humberside.

No, no and I don't know! If you're on a low income, why did you bother to buy this non-starter of a computer? OK, I don't want to make you feel like a complete dork, but I'm afraid there's simply no way to get cheap spares for a Nimbus or to connect the machine to a domestic television.

You might try contacting Research Machines on 0243 799205 but I doubt they can help. Perhaps the best course of action is to off-load the machine via a free ad in Shopping Express and to keep the resultant cash somewhere safe until a semi-decent second-hand computer comes along.

By the way, if 'low income' translates to 'student grant' then you can buy a Commodore Amiga via your students' union on the 'never-never', or get a whopping great educational discount on an Apple Macintosh.

HELP! ST C-Itoh

I have a C-Itoh printer and use it with *PrintMaster* on my Atari ST. But occasionally when I print out, the print head starts its run on the far right before the perforation. Do you know how to cancel this?

Angus Iron, Selly Oak.

Simple! Issue a carriage return and line feed command before printing (usually in the form `LPRINT CHR$(13)` and `(15)` respectively).

This will have the effect of returning the print head to its usual left position and will perform a line feed necessary to the skipping of the perforation.

Alternatively, simply set the printer off-line and twiddle the paper advance knob until the print head is below the perforation.

HELP! SAM more

I've just bought a SAM Coupé with single disk drive and printer interface and despite what the pundits say, I'm as happy as could be with it *(good for you! – Uncle TT).*

My query for you is I intend to add to it some time in May, but I'm uncertain as to which addition to get first – the extra memory or a second drive. Your advice would be greatly appreciated.

Barry Walton, Whitely Bay, Tyne and Wear.

Fear not Baz, for Uncle TT can smooth the upgrade way. A RAM memory upgrade will enable you to access far larger databases, spreadsheets and the like. If your 'bag' is word processing, then a large memory will allow you to create correspondingly large texts (particularly useful if you're about to produce the definitive first novel). More memory provides more scope for writing games such as adventures where you can have large, detailed descriptions of the various locations and more rooms, caves or whatever to explore than you can shake a brass lamp at.

So for both serious and leisure software, a larger memory is desirable. However, the SAM Coupé comes complete with a comparatively large basic RAM quota and most commercially available software will work happily on unexpanded machines as well as those with RAM upgrades.

On the other hand a second disk drive will add flexibility and ease of use to your system. There's nothing quite as tedious as performing disk copies with a single drive (insert the source disk, read, remove the source disk insert the target disk, write, remove the target disk insert the source etc., etc).

A second floppy will make word processors and other serious applications a joy to use, enabling you to keep a spell checking or thesaurus disk in one drive and your document file and so on in the other.

On the whole, all things considered, taking into account this and that, summing the various factors, *(and getting paid by the word – Ed)* I would advise against a RAM upgrade and for a second disk drive. Many will decry this decision, but I'm Uncle Techtip... ■

HELP! The plot thickens when it comes to colour

I have bought myself a second-hand printer called a Serial SO56 Compact for my Atari STFM. Unfortunately, I cannot connect the printer to my ST. It comes with an RS232 serial interface but it doesn't fit my ST. Can you tell me a way that I can get it connected? I would be even more grateful if you could tell me the RGB pin numbers for the ST as well as for the printer.

I am also having printer connection problems with my old printer, a Radio Shack TRS-80 four-pen colour graphics printer plotter. There is a parallel port and I managed to connect it to the ST. However, there is also a serial port at the side of the printer that I have not been able to connect, therefore I cannot use the colour option of this printer. Please could you tell me a way to use the colour pens in the printer and the right interface?

Vincent, no address supplied.

I think you may be a little confused by colour options, RGB display options and printer ports in general. If the Serial Compact printer really does have an RS232 standard serial interface then you won't have any problems connecting it to your ST. It's possible – and very easy – to construct your own lead to connect the two devices, although in your case, to attempt the project may be a little ambitious. There are however plenty of retailers selling RS232 leads for the Atari ST. Try contacting First Choice Computers on 0532 637988 who for £9.99 will be able to supply you with the necessary cable.

The CGP-115 printer doesn't need a signal from its serial port before allowing the use of the colour pens and connecting the device to the parallel port of the ST is perfectly adequate. To use the colour pens you must issue the correct commands. From BASIC these take the format `LPRINT CHR$(action)`. So `LPRINT CHR$(8)` has a backspace effect, `LPRINT CHR$(10)` performs a linefeed, `LPRINT CHR$(11)` a reverse line feed, `LPRINT CHR$(18)` commands the printer to enter plotter graphics mode, `LPRINT CHR$(17)` returns the device to text mode. `LPRINT CHR$(29)` rotates the pen holder (thereby enabling you to select a colour other than black). Try this short program:

```
10 LPRINT CHR$(18);"I"
20 FOR N=0 TO 4
30 LPRINT "S";N
40 LPRINT "PHELLO"
50 LPRINT CHR$(29);
50 NEXT
```

You'll be regaled with an ever-enlarging set of copies of the word 'hello' in different coloured inks. The printer can also be controlled using a series of letters representing particular actions. Here is a table:

A – exit plotter mode

C n – change pens to number n (0-3). The pens are usually arranged in the order black, blue, green and red.

D x,y – draw from the current position to x,y. More than one set of co-ordinates may be used.

H – move pen to plotter origin.

I – reset origin to the current position.

J x,y – draw relative to the current position.

L n – choose the type of line to be drawn (parameter in the range 0 – 15, ranging from dots to dashes, bold and so on).

M x,y – moves the pen to coordinates x,y.

P a$ – print the characters in a$ up to the next carriage return.

Q n – Set print orientation. The value of n (0 – 3) chooses normal, down, backwards or up.

R x,y – moves the pen relative to the current position.

S n – changes the size of the printed characters. n can be in the range 0 to 63. '0' gives 80 characters per line while 63 provides one character.

X a,d,n – axis drawing command. 'a' is the axis direction (0 for y, 1 for x). 'd' is the distance between tick marks, and 'n' the number of marks along the axis. Here's a little program to illustrate the axis command.

```
10 LPRINT CHR$(18);"I"
20 LPRINT "M200, -200"
30 LPRINT "X0, 100,4"
40 LPRINT "M0,0"
50 LPRINT "X1,100,4"
60 LPRINT "M0,0"
70 FOR X=0 TO 400
80 A=(X-200)*PI/100
90 Y=SIN(A)*100
100 LPRINT "D";X;",";Y
110 NEXT
120 LPRINT CHR$(17)
130 END
```

As for RGB port pin outs, I'm not sure that you actually want these – I think maybe you confused them with printer port pin outs. But just in case... Reading from right to left from the rear the pin outs are: 1 audio out, 2 composite video, 3 general purpose output, 4 mono detect, 5 audio in, 6 green, 7 red, 8 plus 12-volt pull-up, 9 horizontal sync, 10 blue, 11 monochrome, 12 vertical sync and 13 ground.

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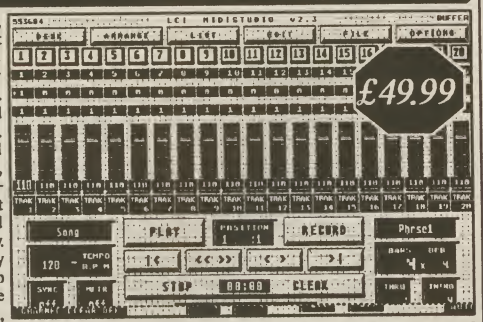

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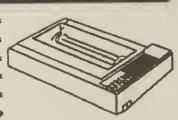

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Music

A ONE, TWO, THREE, FOUR...

Starting in this issue, a seven-part series from Jon Bates covers the subject of music and computers. Week by week we will be looking at various computers and considering their merits for music making.

To start the ball rolling, a complete beginner's guide to the communication standard that enables a computer to be in total command of music, plus a look at the types of software and hardware we shall be considering in the next few weeks.

If you are working with computers and printers you cannot have failed to come across the term 'ASCII'; and when touching on the subject of modern day instruments you are equally sure to have seen the name MIDI.

MIDI is an acronym for Musical Instrument Digital Interface and is found on most keyboard instruments nowadays. It looks like a five-pin DIN socket and there are usually three of them on the instrument, labelled In, Out and Thru. Originally they were only put on rather expensive synthesisers, but now they are found on virtually every keyboard and a few other instruments – guitars, saxophones and even accordions!

"Big deal," I hear you say. "Now what do I do with it?" I think to answer that question it would be useful if we took a trip down Memory Lane, as the way MIDI came into being will shed more light on the subject.

WHY MIDI WAS DEVELOPED

Once upon a time (well, actually about 1981), the synthesiser business was getting financially unhealthy. Although great strides were being made in terms of making smaller synthesisers with a wider range of sounds, the sales figures were falling quite markedly.

This was because each new model launched made the previous one obsolete. Since there is a limit to how many you can play at once, and most players tended to trade in their old keyboard for a new one anyway, there was a great reluctance to buy a keyboard, knowing that in a year or two's time its value would have plummeted. This problem was even worse if you had not only invested in a keyboard but had added to it with matching compatible equipment, say extra sound modules and a sequencer. Bad news. The whole system was obsolete and incompatible with the new one.

What was worse was that the type of plugs and voltage that any manufacturer used to link his synths together was nearly always unique. The punters voted with their wallets and didn't buy the new and shiny models; past experience had taught them a thing or two about depreciation. ➤

NOT A LOT OF PEOPLE KNOW THAT.....

...one of the best selling synth albums of all time was *Switched on Bach* (above) recorded way back in 1968 on monophonic Moog synthesisers with not a computer in sight! It was recorded by Walter Carlos, who re-emerged a few years later as Wendy Carlos, and who contributed soundtracks to several major films including *A Clockwork Orange* and *The Shining*.

...by linking two synths together you don't necessarily make the pitch bend and other things like velocity (volume) sensing and after-touch the same. It all depends on how the sounds themselves have been programmed. For example; you play a piano on synth 1 linked to an organ on synth 2. The organ will not to respond to velocity as befits the real instrument. The pitch bend may not alter the piano, but might well affect the organ. The extent to which any note is modulated or altered in pitch is always down to how that voice is programmed.

...you can't physically transfer a sound from one synth to a different synth. Even if they are of the same make it is only if they are the same model that you can transfer the actual data that goes to make up the sound. You can't take the sound from, say, a Korg M1 and try to put it onto a Yamaha DX7.

...many instruments have lots more notes than they have keys. Only by using MIDI and some software that can transpose (change the pitch) of the notes you play can you access this 'free gift' within the instrument.

...many guitarists now use MIDI, pre-programmed and triggered from foot pedals, to control their effects racks – those boxes that wink at you and transform the most humble of guitars into a raging macho chunk of sound.

...a considerable number of record producers and engineers carry MIDI data files on floppies from studio to studio. This is data for the sound effects units that are commonly found in most major studios. Once these are loaded into the effects units the producer or engineer has a customised bank of tried and tested effects to play with. The Japanese (who else) have proposed a central satellite-linked bank of MIDI files that can be bounced around the world and you could even hire a programmer on the other side of the world to create the sounds on a live satellite link.

...the limitations of MIDI are more to do with the leads that carry it. After about 50 feet the resistance of the wire starts to play havoc with the digital code blasting down it and vital pieces of information get lost with catastrophic results.

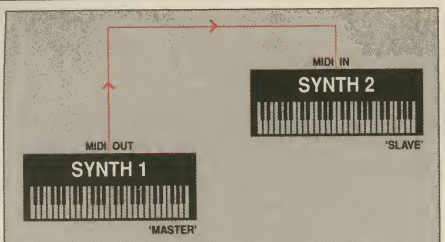


Figure 1. By connecting two instruments together using MIDI like this the first instrument is the 'Master' and the second the 'Slave'.

Synths at this time were analogue, that is, they used good old electricity to create the sounds. Manufacturers, however, were hard at work in the back rooms on digital synthesisers and it was with this in mind that several of them put their heads together to try and come up with a standard that would enable any make and model to be interfaced with any other. The result would be, they hoped, that synths would not be rendered obsolete but form part of a larger system. Their hopes were borne out.

Since the introduction of MIDI in 1983, sales have remained quite healthy and MIDI has spread to even the most humble of keyboards. On the question of obsolescence, one of the first synths with MIDI was the DX7, launched in November 1983, and that has a very healthy second-hand price even today.

WHAT MIDI DOES

MIDI allows one instrument to communicate with another. It cannot have escaped your notice that keyboard instruments have certain similarities – like the black and white keys, the fact that they have buttons to select sounds, and they might have controls to bend and alter the sounds, known as pitch bend and modulation wheels or joysticks.

By connecting two independent synths together you can play the sounds of both instruments simultaneously. Any action you make on one instrument, like moving the pitch bend wheel, will be imitated on the second. To achieve this the instruments need to be connected as in Figure 1, the Out of the first instrument connected to the In of the second.

Besides connecting the instruments together there is one other consideration. The specifications for MIDI allow for more than just one instrument to be addressed individually. In fact a total of 16 instruments or devices can be addressed on an individual basis at any time. For our set-up to work we need to 'tune in' the instruments to send and receive on the same channel. How this is done will depend on the instrument but usually it is done from the front panel.

I should point out that MIDI will cope with various 'modes' that synthesisers can play in. That is, you can set some of them to 'omni' which will mean that they will receive all 16 channels simultaneously either in 'mono' – one note only played at any one time – or 'poly' – all notes played together. The more usual and almost universal default is 'omni off, poly'; it will only receive and send on one user-set channel and will play as many notes as possible at any one time.

INTRODUCING THE COMPUTER

Since MIDI is a digital form of data communication, a computer can easily act as a manipulator of the data transmitted.

If we link a computer to a synth (see Figure 2) with the right sort of software, the computer can act as a storage medium for whatever actions take place on the instrument. If it can store it, then it can also output that data in the same order and in the same relative time that it was put in.

This is the basic premise of a sequencer, which is the most common of all music software.

I have mentioned controls such as pitch bend, modulation and the like which most synths have. The nice thing about the MIDI specifications are that when they were drawn up there was good provision made for future development in various areas, and controls is one such area.

There are at present about 30 or so controls that are commonly agreed on out of the 127 which MIDI allows for. These include such things as volume, pan (the ability to shift stereo sound from side to side), breath controllers, data entry sliders, sustain and hold pedals, expression and balance controls (for multi-keyboard set-ups), and tremolo and chorus controls.

You can see from this that MIDI has a long way to go yet.

THE SYNC UNIT

So far I have talked about straight instruments with no drums or any other time-dependent devices. Just suppose that you decide to buy a drum machine and use that as well. All drum machines have sequencers built-in for you to make up drum patterns and store them, and link them together to form a complete song pattern. Drum machines also have an internal clock that determines their speed.

If we wish to use a drum machine with a piece of sequencing software, and perhaps a synth, then we need to be able to do several things. First we need to be able to start and stop the sequencer and drum machine simultaneously. Secondly, we need them to run in exact synchronisation, otherwise a hideous mess will ensue.

The first is easy to achieve as 'start' and 'stop' messages are part of the MIDI language. To get them to run in time, however, we have to alter either the drum machine or the software. Part of the MIDI code says that timing pulses can be sent from any device that uses an internal clock; this includes drum machines and sequencers (which are often found nowadays on small keyboards and synth 'workstations'). The approved method is to decide which device is to be the master clock and then set all other instruments that require timing to disregard their own internal clock and take their speed from the MIDI clock pulses in the incoming data stream.

The frequency of the clock pulses determines the speed, and by altering the tempo of the master device it alters the tempo of the other instruments 'slaved' up to it. Clock pulses are not dependent on being set to a particular channel; they are sent and received regardless of channel.

SONG POSITION

There is also provision in the MIDI code for something called a 'song position pointer'. If the drum machine also obeys this it means that if you have planned out the drums from start to finish on the drum machine's sequencer, you don't have to start from the beginning of the song every time you want to add an extra part or new instrument. The position that the sequencer starts from will be sent to the drum machine which will find the correct place in the drum patterns.

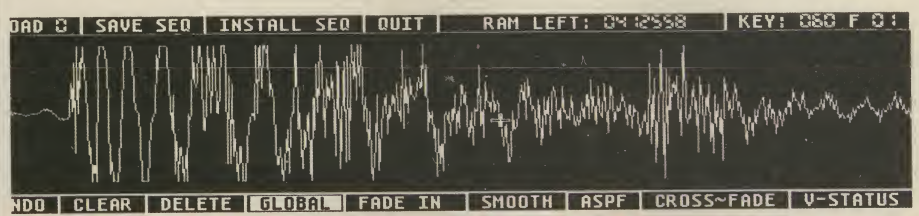
This concept is also used when synchronising to video and recording tape, but to do this you need hardware to either use MIDI Time Code or the more usual SMPTE time code.

I have another way of using drum machines though. I prefer to not use the sequencer in the drum machine at all, but rather to treat the drum machine as another keyboard and play and sequence the drums from my master keyboard. This is possible with nearly all MIDI drum machines, and means that you only have to learn one set of commands and controls – those of your main software.

Some pieces of sequencing software have separate drum pages that graphically display the rhythm pattern you have input and let you move beats around with the mouse or cursor.

ADDING MORE INSTRUMENTS

If we go back to Figure 2 you will see that the instrument and the computer have two-way communi-



SOFTWARE AND HARDWARE: WHAT DOES WHAT.

SOFTWARE

Sequencer. This can be either software or a stand-alone piece of dedicated hardware. Either way it is a device that stores and organises musical data – notes, sound changes, controls etc.

Think of it as a very advanced multi-track tape recorder crossed with a word processor. Input is either recorded as you play it (real time) or note for note (step time). Quite often software sequencers can control the internally generated sounds of the computer as well.

Voicing program. Addresses the sound generating chip directly, either the sound chip in the computer or a specific synth. Creates sounds with much use of graphic displays and stores sounds cheaply and efficiently on disk.

Sample editing. Graphic display of sound for easy editing. Again works either with internal sounds or a sampler and stores them in libraries on disk.

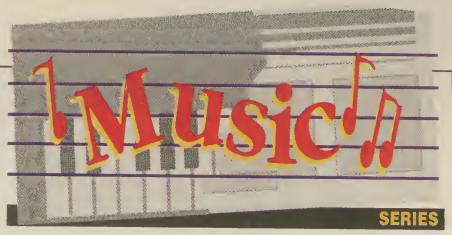
HARDWARE

Tone Module. Basically a synthesiser without a keyboard for use in a MIDI network. More often than not it is multi-timbral – capable of playing several sounds at once on different channels which usually includes drum and percussion sounds.

Sampler. Digitally captures sounds and plays them back. Can be either a bolt-on device with software control for a computer or a stand-alone device. Either way it is usually played back via MIDI.

Drum machine. Stand-alone module that has drum sounds built-in and the ability to record patterns of those drums, usually input from pads on the top of the module. The patterns can be linked together to form a whole song.

Effects Unit. The hip term is 'FX unit' and it usually means any device that alters the sound after it has left the instrument. This can include reverb, echo, and all the tricks in the book such as panning the sound automatically, phasing, flanging, chorus, delay and so on. Nearly always digital in operation, and most of them can use MIDI to change sounds and store effects.



one way to record the data in the computer and the other to play the instrument from that data inside the computer. How this is usually done in practice is not quite so straightforward, for reasons which will become obvious when the network of MIDI instruments is extended.

Most instruments can 'detach' the keyboard from the sound generating section. This is called 'local off' and can also be controlled by MIDI code. Once this is achieved you have effectively disconnected the keyboard from the rest of the instrument. The reason for doing this is that when you add other instruments into the MIDI network you don't really want to hear the sound of your master instrument at the same time as you are playing another instrument via MIDI.

The sequencing software is nearly always equipped with a software controlled link called 'MIDI Thru' which will connect the data being input to the output port, usually passing it through some filtering routines. As you play your main keyboard, regardless of what channel it is outputting on, the Thru part of the software alters the channel in real time as the data comes in so that it can then be picked up by the instrument set on the chosen channel.

For example, in Figure 3 we have a master keyboard/synth that inputs the keyboard data. The software will not only record whatever is played but also output it simultaneously, re-channeled to your requirements. Thus the master keyboard in this case is playing the drum machine – set on channel 10 – with the data re-channeled by the software. The other instruments in the chain ignore this as they are not set to receive channel 10.

CHAINING

To chain the instruments together we use the Thru port as a link to the next device in the chain. Thru is an exact replica of the incoming data. By effectively disconnecting the master synth from its keyboard it becomes just another sound generator in the chain and saves you having to turn it down when you use it.

Another important point is that if you left it connected internally, when you came to record it you would be setting up a loop; the notes would be played not only from the keyboard directly but also from the MIDI network fractionally later. The result is notes droning on as the command to switch them off is wiped out by incoming data.

There are various other ways to overcome this problem but this offers the easiest and most straightforward way of controlling a whole system without having to press lots of buttons at each stage of building up your piece.

EXCLUSIVE, EXCLUSIVE

Part of the MIDI code is reserved for each manufacturer who has an agreed code number. If a MIDI message is sent with a Systems Exclusive tag attached to it plus the manufacturer's identity number, then what follows is data and instructions for instruments of that make only. You could consider the Systems Exclusive part of the MIDI language rather like an *Alice in Wonderland* mirror. Once you step through it you never know what you can do or what is going to happen.

The main use is to talk directly to the chips that generate the sound. This brings us to the second main use of MIDI, the ability for software to address the tone chips and help the user to program the sound. Not only can the computer program new sounds much more easily than the instrument because of the graphic screen displays, but it can file the sounds away into libraries. Voicing software is a great asset as many modern synthesisers are extremely complex.

This is particularly evident when we come to deal with multi-timbral tone modules that not only create individual sounds, but are able to stack any combination of these sounds up – as many as 16 in one go, all operating on individual channels and with effects like reverb built in. Voicing software needs to be connected up as in Figure 2, as two-way traffic is needed between the software and the instrument.

A variation on voicing software is software that edits the parameters that govern effects units. Many effects units – by this I mean reverb units, multiple echo units and so on, sometimes combined in one multiple effect unit – are MIDI compatible. These means that not only can quick effect changes be made in the performance of a piece but you can also make up your own effects and store them for future use.

Another variation on this is sample editing. Samplers are devices that store sound digitally, and to be honest most users tend to buy the sounds off-the-shelf, since recording the raw sound can pose problems (do you have access to a Peruvian nose flute?), and editing the result so that it loops properly causes much frustration using a matchbox-sized display.

Help is on hand because there is a MIDI Sample Dump standard that will drop out the raw data from the sampler to software that displays it in something approaching a reasonable magnification, and also has on-screen tools and routines to help you get a good edit every time. Even if the sampler doesn't handle dumps like this there is usually a piece of software about that will do the business for you.

MIDI: THE FUTURE

The buzzwords at present are co-existing and universal programs. The concept of programs co-existing (that is, multi-tasking) is a jolly useful one and many of the major software houses already have systems out that let several programs co-exist and interact. Of course this is more than a trifle greedy on the old memory, but it does have its uses, particularly when you want to tweak up a sound or change a sound in a synth; at present you have to abandon your work composing to re-load up the voicing software. Even better is the news that some of the software houses are making their software mutually compatible.

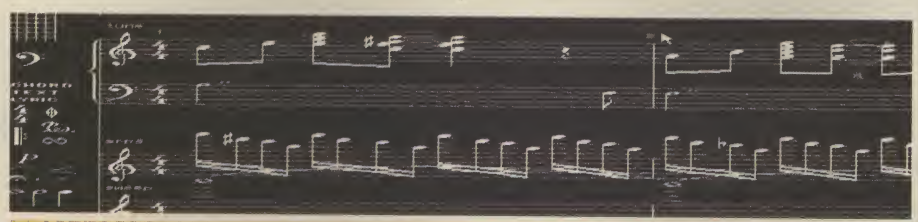
Universal programs are usually voicing programs that can work with any synth. You load up the basic program and then load up the template that suits the instrument you intend working on. Saves money, saves time and you don't have to learn your way around lots of different programs.

For the future, I feel sure that we will see MIDI extend to totally controlling recording studios – some tape recording machines already have a degree of MIDI control and you can mix MIDI instruments with some software.

The next logical step is to control video and other machines. All switching and signal routing could be done in software and the final result will be sampled onto a hard disk for clarity and editability. This can only be good news for the small studio since automated mixing desks at present come at long distance phone number costs.

MIDI controllers have a key role to play in that other area of massive future expansion, multimedia. Using the computer as the base, 'real' music can be combined with on-screen and projected images to form presentations or 'concerts'.

The squeaky-clean buttonless digital studio is around the corner and heading for your spare room. ■



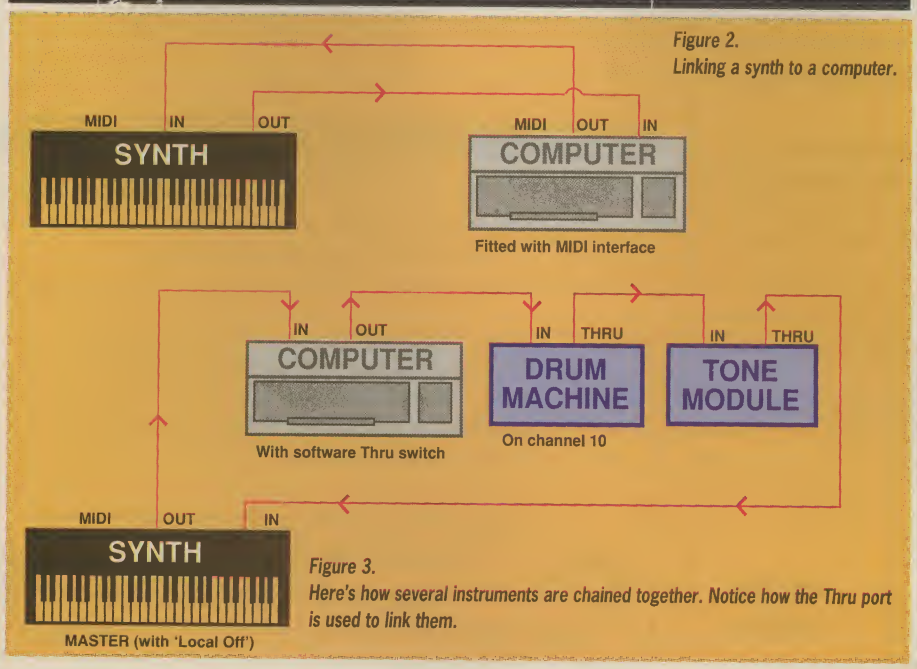


Figure 2. Linking a synth to a computer.

Figure 3. Here's how several instruments are chained together. Notice how the Thru port is used to link them.

NEXT WEEK'S MUSIC FEATURE WILL LOOK AT THE SOFTWARE FOR THE COMMODORE AMIGA

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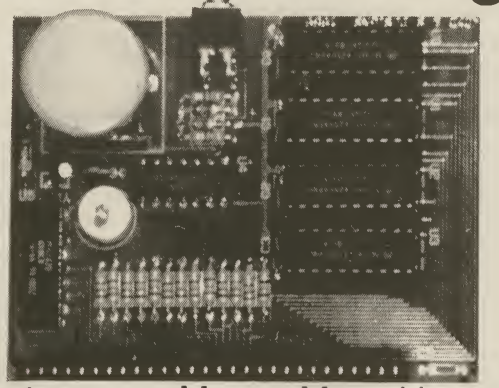

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PROCESSED Ps AND Qs

Tim Smith continues his tips and tricks on BASIC applications programming by looking at the design decisions you need to make when you write your own word processor. Next week: calculating with a customised spreadsheet.

There are still many people who assume that computers do one of two things; they either play vertically-scrolling shoot-'em-up games or they attempt to take over the world. When writing to the *Daily Pravda* about computers being more highly rated than people, they take out their quill pens or, if they're really hi-tech they trundle out the sit-up-and-beg typewriter.

Then they make a mistake and go for the corrective fluid. By the time the letter is finished, corrections made and addresses looked up, they will still be narked and as worn out as their ideas. You will probably have finished scrolling and shooting (or re-modeling dynamic fluid states), your 48K Sinclair will have taken over the world, and you'll be looking for something more interesting to do. If only they'd heard of the word processor like you have.

GET DOWN ON IT

So, the anti-computer Luddite is a target for derision, but what of the rest of us who do use the machines? In the league of software, the word processor rates as a good Liverpool with its consistency of use. But there is far more to it than meets the eye.

A simple word processor should be as easy to use as a typewriter, but should do away with paper wastage (you edit on-screen not on-tree), rubbings out and correction fluid (you use the delete keys), re-typing (simple, use the copy of your document which is held on disk), page formatting (the word wrap and justifying techniques do this for you), and give you a clean printed output.

The only problem with using BASIC to try and write your own word processor is the way in which the language handles strings (a string is signified by the $ at the end of a variable such as pravda$) and string variables. Most forms of BASIC that I've come across can only handle variables of up to 255 characters in length. This obviously presents some difficulties when if you wish to produce documents beyond those which would fit on a notepad.

For a piece of software whose role in life is to handle text, this is less of a problem and more of a catastrophe. There is really only one way to get around it and that is not to use BASIC at all. You need to make use of the dreaded machine code.

LEAP OF FAITH

Machine code is an anathema to first-time programmers. BASIC stands between you and the heart of your machine and acts as an interpreter, allowing you to use a pseudo-language in which real words such as IF, THEN, and WHILE are used. Machine code, on the other hand, does not muck around. It is unlike any language you have ever seen and certainly ever spoken (while sober) but it is far more powerful.

Leaping from BASIC to machine code is not not an easy thing to do by any means. It is akin to making a jump from the top of the wardrobe to the bed, and then trying the jump from a Hercules transport at 50,000 feet. The end result – you land – is hopefully the same, the intervening techniques are vaguely similar – you jump – but the application is entirely different and the possible mistakes can produce far more dramatic results.

If machine code is too shocking a change for you, you could try to use one of the other languages available such as C, the flavour of the last few years. You might like to delve into the strong applications writer, COBOL, or you could even hazard a go at FORTRAN. All of these differ massively from BASIC, but will at least allow you to produce a word processor which would have more power than a BASIC job. However, the first and most stultifying problem with these other languages is that they don't come packaged with any micro, and so you have to fork out for them.

DEAR, DEAR IDEAS

Whatever language or system you decide upon, you should go about the program design in the same, structured manner. Your word processor should be flow-charted with these two starts and finishes:

- Text input at the start.
- Text output at the end.

Never lose sight of the simple things. The reason for having a word processor is to produce words. The text input option is split into two levels; text in from the keyboard and text in from another file. Text output uses three formats; text to printer, text to screen and text to file. Already you have given yourself five subroutines to be going on with. All of these are as important as the others – a word processor is obviously less than useless if you can't print out, but also what is the point of creating those words if you can't save them? Of course once you have saved them you will need to reload them for further editing.

Always, always look at the basics. ■

THE CODE BOX

Even though a half-decent word processor cannot be produced using BASIC (I'll be glad to be proved wrong), you can create a few of the subroutines which might be used in one and which are definitely useful in other programs. One of the most common is the menu. A quick routine for this is on the right.

There you have it, simple, clean and can be moved to any program you desire which only a few minor changes to the numbers and options.

```
10 PRINT CLS
20 LOCATE (10,10); PRINT "(1)Text input"
30 LOCATE (10,20); PRINT "(2)File input"
40 LOCATE (10,30); PRINT "(3)Print output"
50 LOCATE (20,40); INPUT "CHOOSE AN OPTION, 1,2,3";opt%
60 IF opt%<0 THEN GOTO 50
70 IF opt%>3 THEN PRINT BEEP:GOTO 10
80 ON opt% GOSUB 100,200,300
```

• An example routine to build a menu system.

CHECK LIST

So, even though BASIC might not be the best language to use, the planning for any language is the same. The logic must be as solid and the designing as clear. For a word processor you will need to have the routines we have already mentioned set up.

Once these are done you can think about such wonders as:

- Saving blocks
- Moving blocks
- Inserting names and details from database files
- Creating printer control commands such as italics and bold
- Word wrapping (which is the thing that really sets a word processor apart from the typewriter)
- Justifying text (making it even at the right-hand edge)
- Search and replace facilities
- Formatting templates for pages.

The frills will make life easier, but always plan out the basics first, no matter what machine or what language.

SCOTTISH ACCENT

We reported in Express 75 that artificial intelligence experts at Edinburgh University have succeeded in developing a powerful speech recognition system based on an IBM PC. Stuart Low went to see the device in action and talked to its designer, Andrew Sutherland...

Working from the Centre for Speech Technology Research (CSTR), a dedicated team, headed by Professor Mervin Jack, has collated a wealth of knowledge and experience drawn from over six years research to develop the Osprey speech recognition system.

Osprey (Original Speech Recognition at Edinburgh, no one could elaborate on the 'y') was first demonstrated at the PC Forum in Paris to gauge scientific reaction, before its official launch on March 7 in London.

This project challenges head-on the traditional methods used in the development of speech systems to date, as Osprey's designer, Dr Andrew Sutherland, explained:

"The most common type of speech system available uses isolated word recognition. That means that you must clearly pronounce and stress each word before the system will understand you.

"Effectively it tries to form the idea of what a total word sounds like. In order to do that when you're training the system you have to utter a particular word several times in succession until it gains an idea of how to recognise that word."

Q. By comparison, how does Osprey recognise and distinguish speech sounds?

A. We are using continuous speech modelled on sub word units – phonemes.

In the English language there are 44 phonemes, basic sounds, which go to make up any word we say. There are, however, slight differences ('allophonic' variations) in what we would, essentially, call the same sound. For example there is a difference in the 'ah' sound between 'man' and 'cat', due to the phonetic arrangement of each word.

Osprey was trained to recognise these 44 sounds through the careful construction of a set of approximately 200 sentences, which included a number of repetitions of each sign of the language.

We then went through a semi-automatic stage of labelling each sentence, cutting it up and sorting it into hoppers of sound. Once we had around a hundred examples of each individual sound we trained a model to recognise it. These Markov models, as they are known, use a sensitive statistical technique to enable them to differentiate between sounds.

The next stage is recognition. Say, for example, you want to recognise the word 'runway'. In phonetic terms that's an 'r' followed by 'ñ' followed by 'w' followed by 'ei'. The models of sound are literally tacked together into a sequence and, in effect, manufacture the word 'runway'.

You can switch to any new vocabulary using this system.

Unfortunately in English some words can present difficulties, 'cough' and 'plough', for example. In such a case the system has first to look up a pronounciation dictionary to see how the word is pronounced before it can tack together the sounds and recognise what has been said.

Q. You overcame the problem of speaker dependency by designing a data acquisition system. Can you explain what this is and how it works?

A. First of all, I'll caution about the speaker dependency abilities of the system. There is very much a trade-off in the present system between speaker dependency and the size of the vocabulary.

If the vocabulary is small and the grammar simple then speaker independency is no problem. As the grammar becomes more complex, and the vocabulary much larger, the possibility for error rises considerably. To maintain accuracy you really have to become more speaker dependent.

The data acquisition system is quite straightforward. You start off with a high quality microphone, currently we are using a close talking one in an attempt to overcome background noise. We then take 10 milliseconds of speech and digitally turn the sound into a frequency representation before moving on to the next 10ms and repeating the process.

When a new sentence comes in we change it sequentially into a series of spectral shapes. Spectral shapes largely correspond to the shape of the vocal tract at the time when speech changes from one sound to another.

During the training phase we compiled a dictionary of 256 of the most commonly seen spectral representations. This means that each shape is assigned a number by which it can be identified.

As our dictionary contains only 256 numbers (one byte) we have reduced the entire speech signal to one byte every 10ms. This output is then fed into a Markov model to find out which sound it was.

Q. What kind of hardware was used to develop the system?

A. The system was developed entirely on an IBM PC which contained a digital signal processing card to handle the spectral break-up business.

The card, developed by Loughborough Sound Images, uses the AT&T DSP32C processor. With a cycle time of 80 nanoseconds it has a throughput of around 25 million floating point operations per second, offering very high speed digital processing.

To identify the sound that produced the bytes of speech, they are then fed into an array of four Inmos transputers, plugged into the PC.

Q. What alterations must be made to the system before it can be run on portable or hand-held computers?

A. The fact that we use plug-in boards means that any PC-compatible portable which can take at least two expansion cards can use the Osprey system as it stands.

Q. What is the minimum hardware configuration needed to run the Osprey system?

A. A PC AT and a microphone.

• Andrew Sutherland (left), the Osprey's designer, uses the system to run a simulation of an air traffic control tower.

• Edinburgh (far left): the Scottish capital is a centre for artificial inteligence work.

Q. The European Community's Information Technology program has given you a grant of £500,000 to help develop speech recognition in seven European languages. Which languages in particular?
A. This comes under the project heading 'Polyglot'. The European project, involving 11 countries, is subtly different from Osprey, although Osprey is an example of how we are qualified to gain this kind of money from Europe.

The European languages we are working on are English, Italian – Olivetti is a prime contractor for this project – German, Dutch, Greek, French and Spanish.

Q. What has the system proved capable of so far?
A. It's certainly capable of real-time operation and has proved quite comfortable with vocabularies of a few hundred words. However, we find it very difficult to give a figure in terms of accuracy.

If we use a speaker dependent mode, with the same user and trainer, we can clear Edinburgh Airport several times, with the air traffic control simulation, with no errors.

However, we stop short of saying it's 100 per cent accurate because, clearly, if we went on we could suddenly get a burst of errors. To rest a point, we would say it's comfortably accurate.

The system always seems to recognise the user, and its response time is immediate. The vocabulary and grammar have reached a stage where they allow us to use quite complicated scenarios like aircraft ground control and control inspection systems quite comfortably.

Q. When do you expect the system be commercially available?
A. In a sense it is commercially available now. If someone has a particular application and they wish to contact us, we can provide the system together with help and consultancy to get the client up and running right away.

Q. It has been hinted that the price could drop to as low as £1,000.
A. Yes, I can confirm that. However, that would be very much dependent on what funding we get. Osprey was funded using the University's own funds, and from now on we really need to look towards getting industrial funding to help us get it down to £1,000. But we are sure we can do it.

Q. How long will it be before you are in a position to do that?
A. If we had good funding, which would allow us to go ahead immediately and combine the two circuit boards we have at present into one, I feel that it could be within a year.

Q. What type of speech computer interface products do you expect to see emerging in the near future?
A. At CSTR we have a concept called 'Office 2000'. In the near future we envisage a lot of speech technology in the office. We think the office is the first place to go for as people are perhaps more familiar with high technology equipment.

We already have voice control spreadsheets. Another application we are concentrating on is a diary system capable of recognising speech for control references, and which would subsequently store actual spoken speech for appointments and suchlike.

Q. What markets do you see following on from there?
A. One thing that has interested us is database querying. In general a large amount of information is held in databases. Information which needs to be accessed quickly and often intelligently.

A complicated search strategy could be initiated by saying, for example, 'Find all males who are non-smokers over the age of 25' and out it comes.

Another area which interests us is high technology training. It has become very popular now to train people on high technology equipment using interactive training mechanisms. Speech could help to control the simulations that you are demonstrating to a class.

Q. Do you see word processing as a viable application for speech recognition?
A. Word processing to us is two separate areas. One is simply the input of text while the other is the use of control references. In the short to medium term it's the controller which we would look at first.

It would be possible to say 'print that document using a Times Roman font' or 'make a new paragraph there' and so on. That would be no problem.

• Four Inmos transputers on this board handle the speech pattern analysis. Transputers are capable of parallel processing, a technique which lends itself to this kind of analysis problem.

The input of speech is a different story. Because we use such a wide vocabulary, it's not reasonable to ask the computer to scan practically all the words in the English language.

However, that's nearly possible with isolated word recognition, and in due course it will become possible to extend this to continuous speech systems.

Q. How close are we to a machine which not only understands what we say, but which is capable of verbal participation in a meaningful, 'intelligent', conversation?
A. There are a few aspects to that. First of all verbal participation is the same as talking back. That's not too distant, we've got reasonably good text to speech systems which are now at quite a high level.

It's going to be a while before we get conversation. However, to get some sort of dialogue going, as with Osprey, we concentrate on the control system.

It's one thing recognising speech, but it's quite another thing taking that speech and getting the computer to do something meaningful with it. We call that 'speech understanding'.

The Osprey system does have a little understanding built into it, for example, having said 'British Midland 061 taxi to runway 25', the system will recognise this and parse it down:

What plane?
Where's that plane now?
What's he asking it to do?
What runway?
Is that runway clear?

From this we can see that there is a bit of understanding there, and clearly there is a form of dialogue in a sense that the system can come back an say 'invalid command – the plane is not ready' or something like that.

True speech understanding is an arena into which CSTR is really willing to move as of now, with systems like Osprey providing a base plate for future work.

NT ON SPEECH RECOGNITION

Q. What sociological implications can you see arising out of the widespread use of this technology?
A. Through the use of speech technology and speech understanding it will become possible to interrogate a database or a spreadsheet in natural language. Therefore access to information should become much easier.

Secondly, and very importantly, is the aid to the handicapped. We've already had some interesting queries from people involved in manufacturing goods for the disabled.

For instance people who are unable to use public telephone exchanges due to limb disabilities could simply talk back to the exchange and say 'dial 231 now' or 'hold the line' and so on.

Q. What has been the attitude of the Government to this project?
A. The Scottish Development Agency have very positive about the system and are very interested in giving us some financial support.

Q. With a sustained source of funding, do you see a time when Britain may once again be in a position to challenge the Japanese lead in artificial intelligence?
A. Yes, I very much hope so. It's important to note that within Europe in particular, we have a lot of expertise in our languages. We hope that CSTR can become a European centre of excellence.

The Japanese are really out on the sidelines here as are, to some extent, the Americans. We have a hotbed of European development here where we can all help one another with our languages. This is a big market which I don't believe the Japanese can really get into very quickly. ■

If you are interested in using the Osprey speech recognition system, Andrew Sutherland can be contacted at the Centre for Speech Technology Research on 031-225 8883

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Britain's liveliest computing forum – packed with comment, controversy and conflict. Write and tell us what you think! Reach us at: *Express Mail, 30 Monmouth St., Bath BA1 2AP* Sorry, no personal replies, even with an sae. This week's replies written by Keith Pomfret.

Live entertainment

I refer to Charles Wehner's letter (*Express* 70) concerning the risk of receiving electric shocks from monitors and cathode ray tubes. Considering what he says, it surprises me that televisions and monitors are not built in a manner to allow them to exploit the safety rule which is applied to capacitive circuits in most industrial and research establishments.

Surely monitors and televisions cannot be regarded as being safely designed if they do not make use of the SIDE rule.

The SIDE convention is simply:

Switch off the appliance;
Isolate from the power supply;
Dump the electric charge from the capacitive element;
Earth everything in sight.

Only then is it safe to begin work on the equipment.

Why don't manufacturers of televisions and monitors supply circuitry that would enable engineers to dump any charge? It is a crass and reckless disregard for the safety of those who service these appliances.

With reference to Martyn Dryden's letter (*Express* 72), as a *Protext* user I am fascinated by his revelation that *Protext* is 'modal'. I can see how it can be called modal, but don't understand why this is 'inefficient and user hostile'. What are 'human factors experts' and do they have any ideas on user-friendly alternatives to modal programs?

Furthermore is there any sense or logic to any of these ideas or are they just sterile fads which do little or nothing to achieve their alleged objectives?

I would think that Martyn Dryden's contribution to the matter is far more actively misleading than anything in the Buyers' Guide.

J Vickers, Herne Bay, Kent

Firstly, if you've got the back off a monitor or television and you aren't qualified, you're asking to be zapped. Anyone who interferes with high voltage electrical equipment will surely visit St Peter's Gate unless he takes a course in telly-fettling. A qualified engineer would (or should) know about SIDE.

Secondly, I agree with you. I like *Protext* and have used it since the advent of the Amstrad 464 (I now use it on an Amiga). Still, horses for courses. A friend of mine, however, still swears by, not at, *WordStar* (shudder).

The fifth columnist

I quote Jason Holborn, complete with double negative, from *Express* 73. "....if you are an Amiga 500 owner then there is simply no excuse for not buying an A1500 kit...." Well, I'd certainly like one.

I'd also love a huge hard drive like the one Jason artlessly displays in numerous *Amiga Format* screen shots, immodestly labelled 'Jason's 40Mb'. Alas, poor sub-species underling that I am, I can't afford either of these 'essentials'.

Incidentally, does Jason label everything? 'Jason's three-pounder' tattooed on his cranium perhaps? I enclose a 'Jason's 3.5-inch floppy' label for him to stick wherever appropriate.

S Mercer, Guys Marsh, Shaftesbury, Dorset

Yes, you've guessed it. Jason labelled his huge hard one in an effort to make friends and influence people. You got the cranium label wrong, though: it says 'out to lunch'. Oh, and Jason says can he have a smaller label for his floppy.

Anarchy in the ST

My STE appears to be an anarchist. It refuses to be told that it cannot contain 2.5Mb. I have tried threats, bribery, RS232 cables, etc, but it still fails to crash.

That the STE can't use 2.5Mb is based on the misconception that the hardware of the STE is incapable of accepting such a configuration. This is untrue. It is (another) of TOS 1.6's 'undocumented features' that it doesn't read the configuration byte from the MMU properly.

The solution is simple – put a program in the Auto folder that checks for the bad configuration (ie, PHYSTOP=4Mb, MEMCNTLR=9), and lower PHYSTOP to 2.5Mb, then reset. This should only need to be done after a cold boot – the rest of the time the program should just return.

Lastly can I recommend the company I got my SIMMs from – Datrontech Ltd. I ordered on Monday and the SIMMs arrived on Thursday – and that includes the delay for paying by cheque.

T Hoyle, Southsea, Portsmouth, Hants.

Many micros have undocumented twidges and it's only when people like yourself break the news that they➤

It's not necessarily a Mac's world

Your product is so useless. It is overpriced, tacky and looks stupid in anyone's office, never mind home. Those stupid pictures are for kiddies and who would call them art anyway? How on earth do you get away with charging so much for such a product? That's my letter to Apple. I wasn't talking about you lot. *Express* is alright (honest, I really mean it).

But, your review (*Express* 71) of the Apple Macintosh range was too kind to these horrible little excuses for computers. Why charge so much for a little beast that isn't even, in any way, PC compatible?

You have to pay £5,000 at least to get VGA quality on a Mac, compare that to a humble £1,500 PC. Even your readers should be able to tell the difference in price there. 'But they're fast', you may say. Ha, I've thought of that too; who needs it?

The humble Zenith 286 desktop that I use is fast enough for me (12MHz); why pay another £3,500 for a bit of extra speed when a £1,500 PC (with VGA graphics, I might add) is faster than most people will ever need?

To sum up, I think that anyone buying a Mac has more money than sense, when the PC has, obviously, got a lot more going for it, compatibility, adequate speed, VGA graphics, lower price and a much wider usage than the Apple Macintosh will ever have. So, keep up the good work, but remember: the only good from an apple is cider.

Viscount C Grandleswixt-Burrows III (the Violent Squirrel), Piltown, Co Kilkenny, Eire.

• The Apple Macintosh series: are the machines too expensive?

You nearly had me up in arms defending your Macattack but I'm NOT starting a Mac/PC battle. It's bad enough listing to the bleating ST owners and the Soporific Amiganuts.

Suffice it to say that the seven Macs in the *Express* office bring you this vellum tome each week aided only by the dreaded linotron.

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become known. Conversely, if you're running your machine with an illegal amount of RAM and it causes errors or crashes, you have no recourse with Atari. Still, thanks for the tip.

Putting the boot in

How stupid do you think we are?

I am referring to your article 'New Realism for Footie Sim' on Page 8 of your illustrious journal. "Dr Marten Wearer" (sic) be serious. And the phoney screenshot of a hooligan sprite – come on now – who do you think you're fooling?

Nevertheless, an original idea for an April Fool's joke – a lot less obvious than *C&VG*'s Amigadrive effort. (It'd be illegal for God's sake). At least you didn't resort to the typical bullshit hardware article that most mags offer. By the way, is the 'Pooled Resources' article next to your April fool's joke a load of rubbish too?

Daniel Scoffings, Peterborough, Cambs.

The Editor replies:

Er, well actually we did resort to exactly what you describe, now you come to mention it. Apart from the staff panel at the bottom, absolutely everything on page 8 of that issue (the only one dated 1 April rather than 31 March) was absolute nonsense.

You spotted, of course, that Doctor Marten Wearer was not really a Tory MP. Neither is Deepdale a constituency – it is the name of Preston's ground. The hooligan game *Kick-In – Italia '90* is no more real than the company Sensitive Software.

Professor Jack Poisson's AVRIL sytem which lets you see computer viruses through a microscope is complete drivel. (*Poisson d'Avril*, by the way, is French for April Fool).

Commodore and NeXT have no intention, as far as we know, of of running emulations for each other's machines under the non-existent Taos operating system.

There is no Amstrad add-on transputer card, and you are correct in assuming that the Jacuzzi controls built from stripped-down 8-bit computers is equally fishy.

We hope that some readers found the spoofs added a spot of fun to the issue. The incredibly jovial character who wrote the next letter obviously derived stacks of laughs from them.

Amused no end

I was slightly amused by your smug satisfaction at the discovery of April Fool spoofs (*Express* 73, pp 10 & 64), but not at all entertained by the whole page of techno-drivel on page 8 where you indulged in the same stupidity.

Surely you realise that the majority of your readers buy the magazine in a desperate attempt to inform themselves about new technology? At best they will be confused, but worse, could be misled by your nonsense. Next year try something unbelievable, eg "RM and Acorn are to extend educational discounts to families with children aged 11 to 18" – you may even start something useful.

Torofex's query about the use of Acorn's ARM ASIC design in competing hardware is a bit silly – why should Acorn give away its edge? But if he wants to see the same ASIC used elsewhere he has only to peer inside a SAM Coupé.

Once again you have puffed Dolan's products. As far as the bundled software goes, perhaps you mean EZ-DOS 4.01 and an unspecified BASIC? Could your reviewer comment on their compatibility with MS-DOS 4.01 and GW BASIC, which were supplied before the ad changed in *Express* 58?

The Dolan 386 entry is also incorrect – the fast hard-disk is 45Mb. Furthermore, shouldn't you have included the Amstrad 2086, which is still available bundled with *Symphony*, because it does at least have the power supply in the system unit, however plastic and underslotted otherwise?

Finally, I look forward to the next two articles in Tim Smith's programming series. And this from a mag which promised never to print listings. Get out of that!

Mike Smith, Highwoods, Colchester.

You didn't by any chance get out of bed on the wrong side did you? Or are you a founder member of the anti-April Fools' Day Society?

Regarding your comments on Tim Smith's series, don't you think you are being rather small-minded? The *Express* promise not to run listings was clearly, we would have thought, intended to mean that we would not pad out pages with 'Here's a game that you can type into your computer' style space-filling waffle.

Tim's short examples of routines, to help illustrate the general points he has been making, hardly count as 'listings'.

Surely it is the height of pedantry to insist that we meant that we would never ever mention a single line of programming code in our pages – Uncle Tech Tip has to use small examples frequently in order to answer readers' queries.

Frankly, we don't really feel there is anything here to apologise for. We do not see what there is to 'get out of' at all – except, possibly, your pram! ➤

I, expert of the machine called Archimedes

I am an Archimedes-owning reader of *Express*, and I thought I would contribute to your magazine.

To start with I'd like to moan at Archimedes columnists who don't know enough about the machine to write about it and who include things in their column which all Arc owners should know.

In answer to Bertrum Carrot's question about screen grabbing, it depends what you're wanting to grab. If you're trying to grab a picture of the desktop, then *!Paint* does this (click Menu over the *!Paint* icon and select Grab Screen Area).

What happens when the icon bar fills up? The answer is simple. Run !TinyDirs from the Applications Disk 2. Drag onto the directory folder icon at the left of the screen lots of applications and directories: each one will appear on the icon bar.

Once enough have been installed, move the mouse pointer to either the left or the right of the icon bar (depending on which part is being obscured). Now witness the icon bar scroll to reveal hidden icons! However, it is unlikely that you will ever need so many icons installed in a practical situation.

And Bertrum's printer resolution problem. Why didn't he know that the wrong resolution had been picked as soon as he saw the final result? Preferences of paper size, resolution etc can be kept simply by selecting 'Save Choices'?

I feel that your *Impression* review is far too short.Firstly, you made it sound as if 20-odd different settings must be made for every change in style of text. Wrong! Styles can be defined to only change one or two parameters and styles can then be overlaid so that text becomes 20pt, underlined, superscript, italic etc.

Secondly, *Impression* is fine for most tasks on a 1Mb, single floppy. A hard disk and 2Mb of RAM does make life a lot easier, but1Mb is not impossible

• The Archimedes machine is hotly sought after, and it runs very fast: but does the Express columnist Bertrum Carrot know his vegetables or not?

Over-frequent disk swapping is only a problem if you have too little memory allocated to the font system. Even so, the system can quite happily cope with headings, sub-headings, italics and a sizeable amount of text even with 1Mb.

Please expand the Arc column and review more Arc software. Meanwhile, let's hope that Acorn continues to develop the excellent ARM, RISCOS and Archimedes, and that others encourage them to do so.

Chris Eason, Leamington Spa, Warks

Is there a definitive table of what Archie owners should know and what they shouldn't? If there is, please let us have it so we can avoid printing things that they ought to know already. You have attained the 'I know more than your columnist so I can cast aspersions from an apex of superiority' status without any difficulty, so let's deal with your grumbles as they come:

1. We don't pay columnists to learn the firmware and OS spec by rote. Their brief is to provide an easy to read, entertaining and informative column within the time and space allowed. They do it well.
2. I'm sure Bertram will appreciate your advice but was it necessary to curl your lip as you gave it?
3. The *Impression* review was just the right length. If it had been any longer it wouldn't have fitted on the page to which it had been assigned.
4. We treat all machines and news about them on individual merit. If something is newsworthy or interesting, we will have it.

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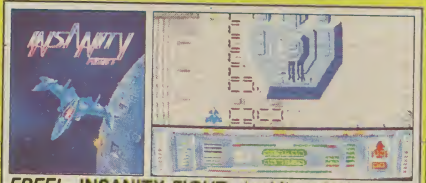

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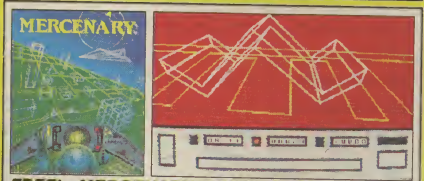

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Do you already own a computer
If so, which one do you own?

A foot ahead

Computer football games have taken massive steps towards realism recently, none more so that the Zenith Data Systems' *Cup Final*, won by the Commodore-backed Chelsea team. Fantastic graphics and amazing sound, spoiled only by confusing gameplay on several occasions, with processing time slowing things down in midfield. All in all, a resounding result for Chelsea and Commodore.

I can imagine the faces in the Zenith executive box at Wembley. They invested huge sums of cash to splatter the bold Commodore logo across Wembley stadium, in front of 70,000 live supporters (well, mostly live), a few million newspaper readers and more than 50 Sky viewers. Not exactly the most desirable culmination to the biggest and most expensive advertising/PR campaign ever.

In brief, as an Amiga-owning Chelsea supporter I would like to take your long running 'my-computer's-better-than-yours' saga one step further by suggesting that my computer's football team is better than yours!

C R Aldridge, Braintree, Essex

Where did you get the idea that Sky has 50 viewers. Does this mean that they've got another 48 since Christmas?

As for the football team saga, there's only one team of any note in this world, and that's Blackpool. Watch out for the *Stanley Mathews Vapour Rub Simulator* available from Bloomfield Software on the Oric.

A satisfied customer

I purchased the 2Mb Stacy with 40Mb hard disk, but the machine came without the instruction book, disks and battery pack (the company I bought it from did say they were missing and would arrive later). I found the machine a little difficult to set up without the disks, but managed to get the hard disk to work with the assistance of some public domain software.

I use it all the time for word processing and spreadsheets. I loaded *Neodesk2* but this caused me a few problems with *1st Word Plus*, as it would not load the printer driver, and with *Timeworks DTP*, which would not load at all. Then I loaded *Shell Fix* and all was well.

I am very pleased with the machine and I find it works with all the software I have, including my public domain disks. I just wish Atari could get its act together enough to bring out the machine with all the bits and pieces at the same time as the machine is ready.

Jeremy Loudan, Teddington, Middlesex

Thank you for your letter – you have shown great inventiveness in getting your machine to operate as needed. You also raise a good point about the availability of bits and pieces, as does Ron James (see below). Good luck for your future endeavours.

An endorsement

I've had an Atari 8-bit for the past seven to eight years and I believe it has the edge over the 64 (in BASIC, disk drive, etc). Furthermore the '8-bitters' still outnumber the '16-bitters' and will do so for many years to come.

People continuously tell me to upgrade and yet most of those I know who have done so have been disappointed; I have no intention of changing simply to keep up with a new fashion.

My 8-bit will do everything I want it to do now, or am ever likely to do. It is unfortunate that manufacturers (Atari and Commodore) do not realise the continued value of these machines; they should dispense with their alterations and incompatible disk drives etc and then the 8-bit computers would be secure for the next 20 years.

It is a fact that the majority of 16-bit owners were not even capable of using the potential of their 8-bits. Furthermore, Atari and Commodore 8-bitters are now paying fantastic prices to obtain older compatible single-sided disk-drives and stocking them up, so as to be able to continue in the future.

Atari 1050 disk-drives (second-hand, of course) can fetch up to £100 in good condition, more if enhanced, and people will swop the new one for the older one.

Ron James, Ribbleton, Preston

If your machine does the job that you want it to and you're satisfied with its performance there's no need to upgrade, but as new technology overtakes the old, be ready to stock up now or pay premium prices later.

The garden fence

I am cheesed off with the amount of bugged software which is churned out by the software companies.

On contacting Origin, having purchased a fau!ty game from that company, I was told that the folks there are well aware of the problem, but I still see the game being sold

I sent a bugged version of *TV Sports Football* back to Mirrorsoft six months ago and I have still not received a replacement, despite several phone calls. I had a similar problem with *Carrier Command*, and *Kick-Off Extra Time*.

Another bugbear of mine is mail order companies. I had a few bad experiences before coming into contact with Martin Bridges of MailCenta in Derby 0773 826830. Martin never advertises games before they are available and always sends goods out the same day by first-class mail.

Furthermore, I was very sorry to see the demise of Xenon Technology recently. Not for the firm but for the considerable number of punters who lost their money.

It was obvious to me that this company was spending more on full page ads than it could ever hope to re-coup in sales. I doubt very much that the computer press received more than one month's payment and yet publications continued to print these ads.

Did they know this company was in trouble? If so, what about loyalty to innocent readers?

M D Clayton, Marshwood, Southampton

Do not give up. If you have bought a bugged product, take it back to the point of sale and suggest that it may not be of merchantable quality: and also demand a refund.

Furthermore, now that you've found a good supplier, stick with him. If he really is that good, he'll change faulty and bugged programs if ever you come across one again.

Additionally, we were as caught out by the troubles at Xenon as anyone. Had we known there was trouble afoot, we would not have extended ad space as we did.

It was not our intention to be misleading to our readership in the least.

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